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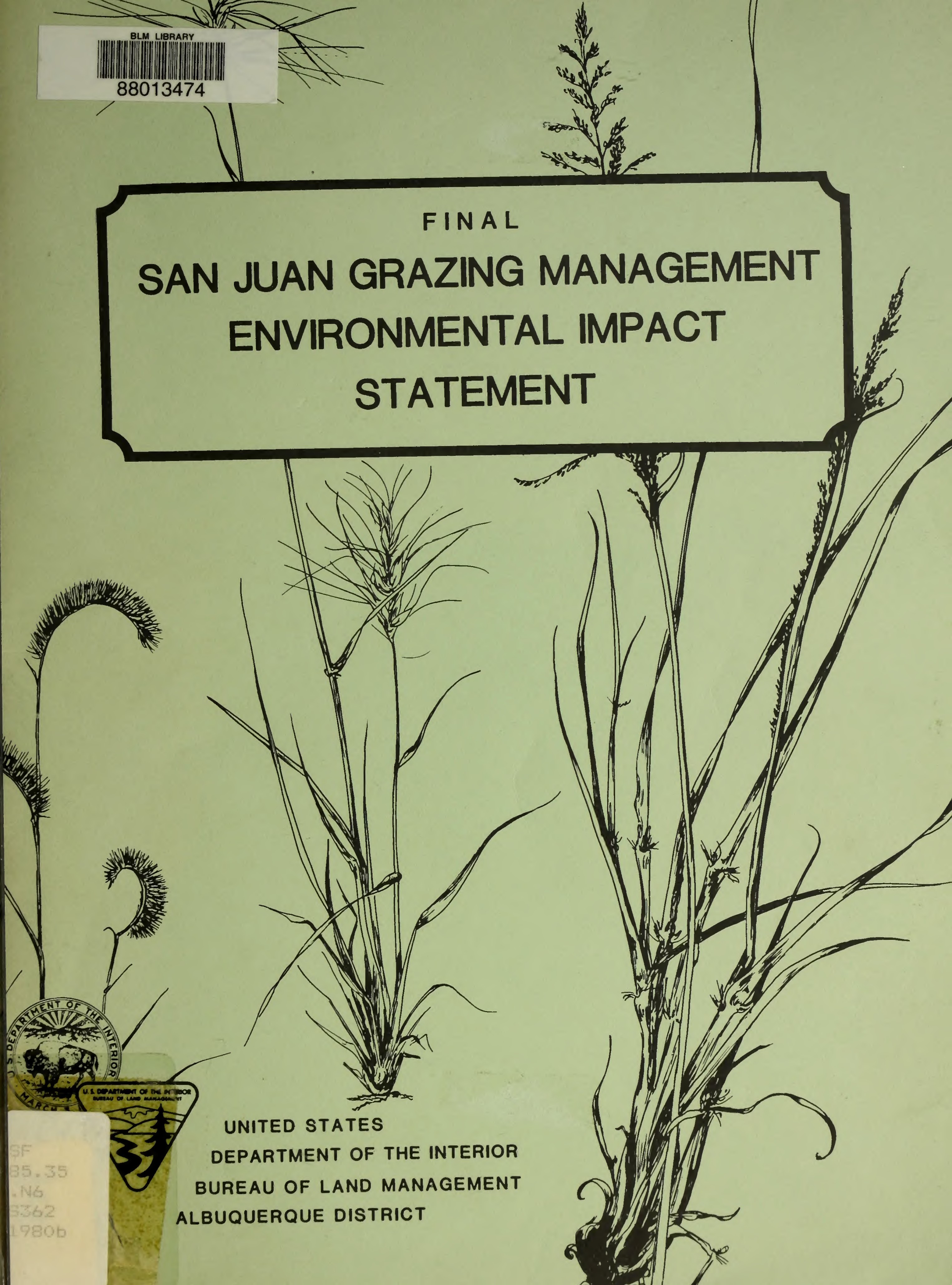
SAN JUAN GRAZING MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ALBUQUERQUE DISTRICT

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NOTICE

This is the Final Environmental Impact Statement (FEIS) for the proposed San Juan Grazing Management Program. The Draft EIS (Int. DEIS 80-39) was filed with the Environmental Protection Agency on June 13, 1980, and was subject to a 45-day public review period from June 13 through July 28, 1980. Because responses to public comments on the DEIS did not require significant changes in data or analyses, the DEIS was not reprinted in full. This FEIS incorporates the DEIS by reference, and includes all written and oral comments received during public review, the BLM's responses to those comments, and additions and corrections to the DEIS resulting from public and internal review. The DEIS and this FEIS together constitute the complete Final Environmental Impact Statement.

A limited number of copies of the DEIS are available from the BLM Albuquerque District Office, 3550 Pan American Freeway N.E., Albuquerque, New Mexico, 87107.

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Type of Action: (x) Administrative ( ) Legislative

Abstract: The Bureau of Land Management proposes to implement a livestock grazing management program for the San Juan Planning Unit of the Albuquerque District in northern New Mexico. The Planning Unit includes portions of San Juan, Rio Arriba, and Sandoval Counties. This program proposes to allocate vegetation to livestock, big game, and wild horses; determine the levels of livestock grazing management; identify needed livestock support facilities; outline a general implementation schedule; list the standard procedures for operation; and discuss the interrelationships with other programs in the area. A Proposed Action and four alternatives (No Action, Elimination of Livestock Grazing, Maximization of Livestock Forage Production, and Enhancement of Other Resource Values) are considered. A discussion of the affected environment is briefly summarized, and the environmental consequences resulting from the Proposed Action and each alternative are documented in this EIS.

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Comments have been requested from: See Chapter 4.

Date Filed with EPA-Draft: June 5, 1980 Final: SEP 30 1980

State Director, New Mexico
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SAN JUAN GRAZING MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

TABLE OF CONTENTS

Page

SUMMARY. v

CHAPTER 4. 1
    Introduction. 1
    Public Consultation 1
    Agency Coordination 2
    Review of the DEIS. 3
    Preparation of the Final EIS. 6
    Contributors to the Document. 6
    Table 4-1 (Comment Letters Received and Areas of Concern) . . 7
    Comment Letters 8
    Table 4-2 (Contributors to the Document). 38

ADDITIONS AND CORRECTIONS TO THE DEIS. 41
    Errata. 41
    DEIS Pages Reprinted with Corrections 45
        Page 2-16. 45
        Page 2-17. 46
        Page 2-20. 47
        Page 2-38. 48
        Page C-26. 49
    Pages Added to the DEIS 51

SUMMARY

Note: Underlined portions are those that have been substantially revised from the DEIS.

SUMMARY

INTRODUCTION

The Bureau of Land Management (BLM), Albuquerque District, proposes to implement a grazing management program on 926,909 acres of public land within the San Juan Planning Unit of the Farmington Resource Area. A Proposed Action and four alternatives have been developed to improve management in the affected area. The purpose of the Proposed Action is to protect and enhance the vegetation resource which provides the foundation for watershed, livestock forage, forestry products, wildlife and wild horse habitat, recreation and aesthetic values, and socioeconomic values.

Description of the Proposed Action and Alternatives

Proposed Action

The objectives of the Proposed Action are to provide 75,410 AUMs of forage in the short term and (69,335 AUMs to livestock, 5,799 AUMs to wildlife, and 276 AUMs to wild horses) 107, 217 AUMs in the long term (90,311 AUMs to livestock, 16,630 AUMs to wildlife, and 276 AUMs to wild horses) for use on a sustained yield basis. Of the 138 allotments in the Planning Unit, 15 with existing Allotment Management Plans (AMPs) would remain unchanged, 2 allotments (1,082 acres of public land) would be eliminated from grazing use, and 121 others would receive more intensive grazing management. A minimum rest period from livestock grazing (April 1 to May 31 and July 15 to September 15) would be required on each of the pastures in each allotment on a rotational basis at least one year out of every three.

Period of use would remain unchanged on 22 allotments. The remaining 114 would require period-of-use modifications to implement the proposed rest period. No change in kind of livestock is proposed.

Construction of range developments and vegetation treatments would be required to implement the Proposed Action. These would include: dirt tanks, pipelines, drinking troughs, wells, storage tanks, spring developments, fences, and cattleguards. Plowing, chaining or seeding of 54,119 total acres of vegetation would occur.

A monitoring program to determine the effects of livestock adjustments (increases or reductions) on plant composition, vigor, and ground cover would be conducted as part of the Proposed Action and all alternatives except the Elimination of Livestock Grazing Alternative.

No Action Alternative

Forage allocations to livestock, wildlife and wild horses would be 71,945 AUMs in the short and long term. Livestock forage allocations would be 66,146 AUMs. The difference between the authorized grazing use (66,146 AUMs) and the grazing preference (108,371 AUMs) would be held in suspension. Forage allocations to wildlife would be 5,799 AUMs (same as the short-term allocation under the Proposed Action), and no AUMs would be allocated to wild horses.

The 15 allotments for which AMPs have been developed would be intensively managed, those without AMPs would be managed as at present, and new grazing management systems would not be developed. No new range developments would be constructed, but existing improvements would continue to be maintained.

Elimination of Livestock Grazing Alternative

This alternative would remove livestock from the public lands in order to reserve available forage for wildlife and wild horses, and for the enhancement of watershed and visual resources. The short-term allocation to wildlife would be 5,799 AUMs; 16,630 AUMs would be allocated in the long term. Wild horses would be allocated 420 AUMs in both the short and long terms. In addition, 69,191 AUMs would be reserved for non-consumptive uses including watershed, wildlife habitat, cover, and aesthetics. No new grazing management systems would be developed and those AMPs now implemented would be cancelled. No new range developments would be constructed unless necessary for wildlife or watershed management. Livestock grazing would be limited to state and private lands.

Maximization of Livestock Forage Production Alternative

This alternative would provide an intensive program of range management practices to achieve optimum forage production for livestock. Initial livestock allocations under this alternative would be 69,335 AUMs. Due to increased vegetation treatments (237,584 acres), 106,748 AUMS are anticipated for livestock use in the long term. Wildlife would be allocated 5,799 AUMs in the short term and 16,630 AUMs in the long term. Wild horses would be allocated 276 AUMs in both the short and long terms.

Intensive grazing management would be implemented on all 138 allotments. Present management would continue on the 15 allotments with existing AMPs. Range developments as mentioned in the Proposed Action would also be constructed under this alternative. In addition, chemical treatment would be applied on 54,119 acres to control sagebrush.

Enhancement of Other Resource Values Alternative

This alternative considers a lower level of livestock use than the Proposed Action in order to enhance other resource values. Livestock AUMs on good condition range would remain the same as under the Proposed Action. AUMs on fair and poor condition ranges (1,075,137 acres) would be reduced 50 percent. Livestock forage allocation would be 42,041 AUMs in both the short and long terms.

Forage allocations for wildlife would be 5,799 AUMs in the short term, and 16,630 AUMs in the long term. Wild horse allocations would be 420 AUMs for both the short and long terms. In addition, 27,150 AUMs would be reserved for other (wildlife) consumptive and non-consumptive uses, including watershed, wildlife habitat and cover and aesthetics. Range developments and vegetation treatments would remain the same as those described for the Proposed Action.

Environmental Consequences of the Proposed Action and Alternatives

Proposed Action (PA)

Vegetation would be permanently lost from about 31 acres that would be occupied by the range developments. Vegetation treatments would change 52,639 acres of sagebrush and 1,360 acres of pinyon-juniper to grassland or grassland-shrub aspect. Cover would decrease from 22 to 16 percent on the sagebrush areas and from 21 to 19 percent on pinyon-juniper areas.

The cover of forage-producing species would increase on about 900,000 acres of the Planning Unit where combinations of rest and grazing reductions were implemented. The overall average increase in total vegetation cover would be less than 1 percent, but increases as high as 7 percent would occur on certain sites. Production of useable forage on public lands would increase about 32,000 AUMs and range condition would improve.

Under the Proposed Action, sediment yield would decrease from 1,654 ac. ft./yr. to 1,316 ac. ft./yr. (a 20 percent reduction in soil loss and erosion). Construction of range developments would cause short term soil disturbances on about 96 acres, and 31 acres would be lost from production. Soil losses on these areas from wind and water erosion would not be significant.

In general, the expected changes in vegetation are not great enough to change existing runoff. Changes may occur on the 54,119 acres proposed for vegetative treatment. Annual livestock watering requirements would increase to 125 acre-feet (a 34 acre-foot increase).

Air quality would not be significantly impacted. Some localized dust emissions would occur during construction of the range developments and vegetation treatments.

Overall, major big-game wildlife species would benefit from increased forage allocations, both in the short and long terms. Competition with livestock would continue to impact antelope in summer ranges and fawning areas. Livestock use before June 15 would result in dietary overlap with cattle and among other species of wildlife. Proposed water developments would ensure a more even distribution of antelope and more equal utilization of forage.

Competition between livestock and deer on browse species would occur in fall and winter. Topographical preferences could reduce competition between deer and livestock except during the winter period when livestock are using deer wintering areas. Water developments would ensure more equal use of forage and even distribution of deer populations in the Planning Unit. Deer habitat would be unchanged.

Elk and Barbary sheep populations would also benefit from the proposed forage allocations. Forage competition between these species and livestock would not increase. Antelope numbers are projected to increase from 186 to 373 head in the long term; deer (yearlong), from 1,286 to 2,591; deer (winter) from 1,691 to 3,416; elk from 40 to 80; and Barbary sheep from 204 to 429.

Non-game species would benefit from the Proposed Action. Overall, competition would decrease due to increased food sources and shelter (cover) types. Scattered riparian habitats would also improve through increased vegetative productivity and protection.

Wild horses would be allocated 276 AUMs in both the short and long terms, (no AUMs are presently allocated for wild horses). Forage competition between wild horses, livestock and wildlife would continue.

Grazing allotment numbers would be reduced from 138 to 136 and operators from 185 to 183. Average licensed use would be increased by 3,189 AUMs in the short term and by 24,165 AUMs in the long term. One hundred fourteen allotments would be affected by the spring and summer rest requirement one out of three years. During these rest periods, cattle would be relocated to allotment pastures not being rested or to other private or leased lands. Impacts on existing breeding programs and livestock management practices would be minimal.

Due to recent rule and regulation changes as published in the Federal Register (Vol. 45, No. 135, July 11, 1980), regulations in 43 CFR section 4110.3-2(b) are revised to read as follows:

> (b) When authorized grazing use exceeds the amount of forage available and allocated for livestock grazing within an allotment or where reduced grazing use is necessary to facilitate achieving the objectives in the land use plans, the grazing authorized under grazing permits or leases shall be reduced to the livestock grazing capacity. The difference between the authorized grazing use and the grazing preference shall be held in suspension.

The effective date is August 11, 1980. In accordance with the regulation changes, AUM reductions from preference (39,036 AUMs in the short term and 18,060 AUMs in the long term) would be held in suspended preference.

Timber reproduction would be slowed in the long term due to the proposed grazing deferment. In general, regulated livestock grazing would be more beneficial than no grazing or overgrazing. Impacts to the woodland resource would be negligible.

Recreation activities would be temporarily disrupted on 54,215 acres of public land during construction of the proposed range developments and vegetation treatments. Total visitor-days (consumptive and non-consumptive) are anticipated to increase from 603,001 (existing) to 938,836 visitor-days in the long term. No impacts are anticipated on the five Areas of Critical Environmental Concern (ACECs) under study (12,595 acres).

Knowledge of the cultural resource base would be increased by inventories on 54,215 acres. Excavated sites and sites exposed to chaining and plowing after recordation would be unavailable for future study. Unauthorized collection and vandalism could rise both from easier site identification in treated areas and from increased visitor use. Site damage could also be increased by future increased livestock numbers.

The development of range structures and vegetation treatments would cause short-term visual contrast on 54,215 acres. Through implementation of the standard operating procedures, these impacts would be minimized.

The Proposed Action would have negligible impact on total employment and income in the area. During the short-term, the Proposed Action would increase total livestock sales on all ranches by approximately $27,690 a year and decrease net cash income to ranch operators by approximately $23,615 a year. The decline in total net cash income would occur because of decreases in actual levels of livestock grazing by commercial-size cattle ranches. These ranches earn a greater percentage of return on their operations than do subsistence-size ranches. Short-term benefits from the Proposed Action would go principally to subsistence-size ranches, while short-term cost increases would chiefly accrue to larger operations.

Under the Proposed Action, the net cash income of a typical subsistence cattle ranch of 14 head would rise from the $160 estimated for 1978 to $200 in 1982, a gain of 25 percent. Over the same period, the net cash income of a typical sheep ranch of 123 head would increase from $295 in 1978 to $420 in 1982, a 42.4 percent rise. By contrast, the net cash income of a typical small-size commercial cattle ranch of 112 head would would fall by $380, or 17.8 percent, and the income of a typical large-size commercial cattle ranch of 528 head would drop by $5,250, or 18.4 percent. The net cash income of a typical medium-size commercial cattle ranch would be unchanged.

Loan valuation of livestock ranches would be reduced an estimated $1.2 million (18.4 percent). Existing outstanding loans are valued at between $2.2 and $4.6 million. The reduction in loan valuation would occur (even though actual grazing levels would increase overall) because loan values are calculated on the basis of authorized rather than actual grazing levels.

The cumulative effect of the Proposed Action would be to increase total livestock sales from these ranches by $404,700 or 28.5 percent (from $1,418,550 in 1978 to $1,823,250 by year 2000). Net cash income would be increased by 28.2 percent, or $92,620 (from $328,465 in 1978 to $421,085 by year 2000).

Visitor-day recreation use (consumptive and non-consumptive) is anticipated to increase from 594,126 visitor days (existing) to 887,259 visitor-days (long-term). (These visitor use totals do not include upland game hunting or fishing activities.) Values of the visitor-days would increase from $3,755,118 (existing) to $6,287,448 (long-term).

Alternatives

Impacts of the No Action (NA), Elimination of Livestock Grazing (ELG), Maximization of Livestock Forage Production (MLFP), and Enhancement of other Resource Values (EORV) Alternatives are summarized in the following table, along with impacts resulting from the Proposed Action.

Note: The changes in this table from the DEIS are marked with a vertical bar (|).

SUMMARY OF IMPACTS

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Vegetation							
Production	AUMs produced on public lands	75,410	107,217	76,066	104,458	123,801	107,217
Grassland or Grassland-Shrub Aspect							
Sagebrush	Acres		52,639	0	0	129,215	52,639
Pinyon-Juniper	Acres		1,360	0	0	108,249	1,360
Barren	Acres		120	0	0	120	120
Livestock Forage Range Condition							
Good	Acres	203,484	371,721	202,832	328,472	442,422	371,721
Fair	Acres	730,168	673,719	708,051	708,273	626,589	673,719
Poor	Acres	344,969	233,181	367,738	241,876	209,610	233,181
Soils	Acre-feet of sediment yield	1,654	1,316	1,650	1,292	1,351	1,312

SUMMARY OF IMPACTS (Cont'd)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Water Resources							
Water Use	Acre-feet		125	91	0	148	58
Decreased Runoff	Acres affected		54,119	0	0	184,477	54,119
Wildlife							
Pronghorn antelope	Yearlong population in numbers	186	373	186	600	373	540
Mule deer	Yearlong population in numbers	1,286	2,591	1,286	5,500	2,591	4,120
	Winter population in numbers	1,691	3,416	1,691	5,900	3,416	5,420
Elk	Yearlong population in numbers	40	80	40	120	80	110
Barbary sheep	Yearlong population in numbers	204	429	350	700	429	680

SUMMARY OF IMPACTS (Cont'd)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Wildlife (Cont'd)							
Upland game bird habitat (510,000 acres)	Trend of habitat quality	Stable - declining	Improvement on about 140,000 acres of poor-fair quality habitat	Stable - declining	General improvement	Deterioration on about 370,000 acres of good quality habitat	Improvement on about 140,000 acres of poor-fair quality habitat
Non-Game species birds habitat (1,429,951 acres)	Trend of habitat quality	Stable - declining	Generally stable-improving	Stable - declining	General improvement	Overall deterioration	Generally stable-improving
Riparian and wetland habitat (4,893 acres)	Trend of habitat quality	Stable - declining	Stable - improving	Stable - declining	Improving	Stable - declining	Improving
Aquatic habitat (189 riverine miles; 17,469 acres of lakes and reservoirs)	Trend of habitat quality	Stable - declining	Stable - improving	Stable - declining	Stable - improving	Stable - declining	Stable - improving

SUMMARY OF IMPACTS (Cont'd)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Wild Horses	Number of animals	23	23	23	35	23	35
	Number of animals	23	23	23	35	23	35
Livestock Grazing							
Livestock AUMs (Licensed Use) on Public Lands		66,146					
short-term	AUMs		69,335	66,146	0	69,335	42,041
long-term	AUMs		90,311	66,146	0	106,748	42,041
Allotments	Total Number	138	136	138	0	136	136
	Number - Increased AUMs (Pref./Av. Lic. Use)		26/74	7/0		26/74	5/37
	Number - Decreased AUMs (Pref./Av. Lic. Use)		108/61	131/0	138/138	108/61	131/99
	Number - No change in AUMs (Pref./Av. Lic. Use)		2/1	0/0		2/1	0/0

SUMMARY OF IMPACTS (Cont'd)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Forestry							
Timber	Reproduction	Slow decrease	Improvement	Slow decrease	Improvement	Improvement	Improvement
Woodland	Standing volume	Increase	No impact	Increase	Increase	Decrease	No impact
	Future production	Increase	No impact	Increase	Increase	Decrease	No impact
Fire Potential		Increase	Decline	Increase	Increase	Decline	Increase
Recreation	Visitor-days		938,836	919,378	1,008,009	938,836	994,674
	Long-term	603,001					
Wilderness	Inventory Unit NM-010-090	No impact	No impact	No impact	No impact	No impact	No impact
	Inventory Unit NM-010-091	No impact	No impact	No impact	No impact	No impact	No impact
Land Use	Number of allotments by principal use						
	Grazing	136	136	136	0	136	136
	Other Uses	2	2	2	138	2	2

SUMMARY OF IMPACTS (Cont'd)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Cultural Resources							
Increase in Data Base	Acres of class III inventories	1,144 sites on file	54,215	0	Trailing areas	211,975	54,215
Increased Potential for Resource Loss							
Vegetation Treatment	No. of sites damaged or destroyed	Est. basin site density 2-90/sq. mi.	Unknown until inventories and AMPs completed	0	0	Unknown until inventories and AMPs completed	Unknown until inventories and AMPs completed
Unauthorized collection & vandalism	Increase in hunter visitor-days (Year 2000	93% of sites studied in poor to mod. condit.	19,458	0	19,458	88,631	75,296
Visual Resources	Acres changed to lower class						
Mgmt. Class II		71,498	No change	No change	No change	No change	No change
Mgmt. Class III		471,884	No change	No change	No change	No change	No change
Mgmt. Class IV		886,569	No change	No change	No change	No change	No change

SUMMARY OF IMPACTS (Cont'd)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Social and Economic Conditions							
Livestock Sales from Allotments	Total dollars per year	1,418,550					
Short term (1982)			1,446,240	1,418,550	145,960	1,446,240	1,029,895
Long term			1,823,250	1,418,550	145,960	2,156,520	1,029,895
Herd Size (Cattle and Horses)	Average herd size by size category						
Short term (1982)	Subsistence	14	17	14	3	17	11
	Small Commercial	112	98	112	35	98	84
	Medium Commercial	268	267	268	73	267	199
	Large Commercial	525	478	525	135	478	349
Herd Size (Cattle and Horses)	All	48	48	48	12	48	35
Long term	Subsistence		22	14	3	24	11
	Small Commercial		127	112	35	156	84
	Medium Commercial		328	268	73	362	199
	Large Commercial		598	525	135	688	349

SUMMARY OF IMPACTS (Concluded)

Area of Impact	Unit of Measure	Existing Environment	Proposed Action	No Action Alternative	Elimination of Livestock Grazing Alternative	Maximization of Livestock Forage Production Alternative	Enhancement of Other Resource Values Alternative
Social and Economic Conditions (Cont'd)	All		61	48	12	68	35
Herd Size (Sheep and Goats)	Average herd size in AUs; 5 sheep = 1 AU	25					
Short term (1982)			33	25	6	33	20
Long term			36	25	6	46	22
Ranching Population (Three-County Area)	Appropriate number of persons						
Short term		1,070	1,080	1,070	440	1,080	Decreasing
Long term		-	1,110	1,070	440	1,120	1,020

Source: Chapter 3.

CHAPTER 4

CONSULTATION AND COORDINATION

CHAPTER 4

CONSULTATION AND COORDINATION

INTRODUCTION

This chapter discusses consultation and coordination that occurred during preparation of the Draft and Final EIS. The discussion includes those contacts made during the inventory process in the San Juan Planning Unit, the development of the Proposed Action, and the writing of the DEIS and FEIS. This Chapter 4 is an update of the Chapter 4 that appeared in the DEIS.

PUBLIC CONSULTATION

On September 30, 1977, the Farmington Resource Area Office sent a general information letter to 50 ranch operators in the San Juan Planning Unit telling them of a public meeting to be held on October 13, 1977 in the old County Courthouse in Aztec. The purpose of the meeting was to brief the ranchers on the range inventory that would be conducted in the Planning Unit and the Grazing EIS that would be developed. Twenty-eight people attended this meeting.

The following year, on August 28, 1978, the Farmington Resource Area Office mailed out invitations to meetings at the San Juan County Court House in Aztec to discuss the progress of the range inventory and to review how inventory data would be used in the BLM planning system. Because of the number of people involved, identical meetings were scheduled for September 7, 1978 and September 12, 1978. A tour was scheduled on the day following each meeting for those interested in observing the procedures used in collecting inventory data. Ninety-seven ranchers and representatives of 3 government agencies were notified of the September 7 meeting; 103 affected individuals and interest groups were notified of the September 12 meeting. The attendance roster was signed by 4 people at the first meeting and by 19 people at the second meeting.

On October 16, 1978, a letter was sent from the Farmington Resource Area Office to advise area ranchers and other interest groups of changes in regulations and policies and to request comments.

On May 3, 1979, a letter from the Farmington Resource Area Office was sent to various organizations representing principal users of public lands in the San Juan Planning Unit. A representative from each group was requested to meet with the BLM to ensure that all resource values would be adequately considered in the Management Framework Plan (MFP) for the Planning Unit. A followup letter, dated June 22, 1979, established June 27 and June 28 as dates for work group meetings.

On June 28, 1979, a press release was issued to the news media in the Farmington-Albuquerque area. This release announced an open house at the Farmington Resource Area Office on July 5, 1979 to provide an opportunity for the public to review and comment on the land use planning for the San Juan Planning Unit. On July 2, 1979, a followup letter concerning this open house was sent to approximately 550 individuals and organizations. This letter summarized the more critical issues that had been identified in the planning system for range, lands, wildlife, watershed, minerals, recreation, and vegetation.

Around July 1, 1979, letters were sent by the Farmington Resource Area Office to all ranchers announcing that inventory data had been compiled and initial recommendations developed. The ranch operators were invited to come to the Farmington Resource Area Office for individual discussions on the proposed changes. Thirty-eight ranchers visited between July 5 and September 5, 1979, in response to this request.

On July 30, 1979, the Albuquerque District Office issued a press release stating that an EIS would be prepared in connection with range use and management on 970,000 acres of public land in northwestern New Mexico. It was stated that a public meeting would be held at the San Juan College Theater in Farmington on August 14, 1979 for the purpose of determining the scope of the issues to be addressed in the EIS. This release was sent to six newspapers, ten radio stations, and five television stations serving the Albuquerque-Farmington area. This same information was contained in a letter sent out on August 1, 1979 by the Albuquerque District Office to all ranchers and interested agencies, groups, universities, and individuals. Sixteen individuals representing ranching, recreation, and mining interests attended the scheduled meeting and both oral and written comments were received.

The EIS team from Albuquerque toured the Planning Unit on August 14-16, 1979. The purpose of this trip was to familiarize the team with the terrain, vegetation types, existing range facilities, and vegetation treatment areas in the Planning Unit.

AGENCY COORDINATION

Required Agency Contacts

On October 31, 1979, informal consultations with the U.S. Fish and Wildlife Service were initiated by the EIS team wildlife biologist in cooperation with the BLM New Mexico State Office. The BLM performed biological assessments of the impact of the Proposed Action and the alternatives on the endangered black-footed ferret, bald eagle, peregrine falcon and Colorado squawfish, as well as the Knowlton cactus and Mesa Verde cactus. The U.S. Fish and Wildlife Service (FWS) concurred with the BLM's finding that there would be no impacts on these species. The FWS findings have been added as Appendix pages G-18 through G-27 of the DEIS (pages 49 through 58 in this FEIS).

The DEIS was submitted to the State Historic Preservation Officer to serve as the preliminary case report for Section 106, National Historic Preservation Act of 1966, as amended (16 U.S.C. 470). This coordination has been undertaken with regard to the impacts on cultural resources and the mitigation of these impacts.

Informal Contacts

The Farmington Resource Area Manager has had periodic contacts with representatives of various federal, state, and local agencies, and private organizations in developing proposed grazing systems, range developments, and vegetation treatment projects.

Both the Farmington Resource Area Office and the EIS team wildlife biologist have maintained frequent contact with New Mexico Department of Game and Fish representatives through the inventory process, development of the proposal, and preparation of the DEIS and FEIS.

The contractor, Harbridge House, Inc., held informal consultations with several federal, state, local, and university groups in developing the social and economic conditions sections of the DEIS.

REVIEW OF THE DEIS

The Draft Environmental Impact Statement (DEIS) was filed with the Environmental Protection Agency, and made available to the public on June 5, 1980. The Notice of Availability was published in the June 13, 1980, Federal Register (Vol. 45, No. 116, p. 40216). The Notice announced a 45-day public review period ending July 28, 1980. The public review period provided concerned agencies and the public an opportunity to review the DEIS and to offer comments on the adequacy of the draft statement or the environmental impacts of the Proposed Action and alternatives.

Over 350 copies of the DEIS were distributed to reviewing agencies and to interested members of the public and the grazing allottees listed below. Those agencies or individuals who responded within the 45-day period are marked with an asterisk (*). A cover letter summarizing the Proposed Action and announcing the times and locations of the scheduled public hearings was mailed with the DEIS. Copies of the DEIS were also made available in public libraries and at the Bureau of Land Management offices in New Mexico, as well as the BLM Office of Public Affairs in Washington, D.C. A reference file was made available for public review at the BLM's Albuquerque District Office, 3550 Pan American Freeway N.E., Albuquerque, New Mexico. A news release was mailed from the BLM New Mexico State Office to radio and television stations, newspapers, and interest groups throughout the state.

Federal Government

Agencies

- Advisory Council on Historic Preservation*
- Department of Agriculture
  - Agricultural Stabilization and Conservation Service
  - Forest Service
  - Farmers Home Administration*
  - Soil Conservation Service
- Department of Commerce
  - Economic Development Administration
- Department of Interior
  - Bureau of Indian Affairs
    - Albuquerque Area
    - Eastern Navajo Agency
    - Navajo Area
  - Heritage Conservation & Recreation Service
  - National Park Service
  - Water & Power Resources Service
  - U. S. Fish & Wildlife Service
  - U. S. Geological Survey
- Department of Transportation
  - Federal Highway Administration
- Environmental Protection Agency*

Officials

- Senator Pete V. Domenici
- Senator Harrison Schmitt
- Representative Manuel Lujan, Jr.
- Representative Harold Runnels

State Government

State of New Mexico Agencies

- Commerce & Industry Department
  - Economic Development Division
- Department of Finance & Administration*
- Educational Finance & Cultural Affairs Department
  - Historic Preservation Bureau
- Energy & Minerals Department
- Health & Environmental Department
  - Environmental Improvement Division
- Highway Department
- Natural Resources Department
  - Department of Game & Fish*
  - Soil & Water Conservation Division
  - Water Resources Division
- State Clearinghouse
- State Land Office

Officials

- Governor Bruce King*
- Senator Jack Morgan
- Senator Christine Donistore
- Representative D. Polk Brown
- Representative Jerry Sandel
- Representative Boyd Scott

Tribal Government

Navajo Nation -- Chairman Peter MacDonald

Local Government

- San Juan Regional Committee
- County Commission
  - Rio Arriba County
  - San Juan County
- San Juan County Extension Agent
- San Juan County Planning Department
- San Juan Soil & Water Conservation District
- Mayor of Aztec
- Mayor of Bloomfield
- Mayor of Farmington

Private Groups

Special Interest Groups

Ada County Fish and Game League

Defenders of Wildlife*

National Council of Public Lands Users*

National Wildlife Federation

Natural Resources Defense Council

Nevada Outdoor Recreation Association

New Mexico Archaeological Society

New Mexico Cattle Growers' Association

New Mexico Farm & Livestock Bureau

Oregon Environmental Council

San Juan Archery Club

San Juan County Museum Association

San Juan Livestock Growers' Association

San Juan Wildlife Federation

Society for Range Management

Sierra Club

Wildlife Management Institute

Universities

New Mexico State University
    Cooperative Extension Service
    Cultural Resource Management Program
    Range Improvement Task Force*

Companies

El Paso Natural Gas Company

Gas Company of New Mexico

Northwest Pipeline Corporation

Individuals

Ranch operators in the San Juan Planning Unit*

Hearings

Public hearings on the DEIS were held in Farmington, New Mexico at 2:00 and 7:00 p.m. on July 8, 1980. A public hearing was also held in Albuquerque, New Mexico at 7:00 p.m. on July 9, 1980. Public comment on and input to the proposed grazing management plan was solicited through formal oral testimony and written statements.

Four persons spoke at the 2:00 p.m. public hearing in Farmington on July 8, 1980. All four individuals represented the Range Improvement Task Force at New Mexico State University, and transmitted orally the comments which were subsequently presented in written form (see letter number 12). Jerry G. Schickedanz provided comments on the general overview of the document. Phillip J. Zwank, wildlife specialist, provided comments on the wildlife sections of the DEIS. Larry Foster, extension beef cattle specialist, provided comments on the sections dealing with carrying capacity. John M. Fowler, agricultural economist, presented the comments prepared by

Dr. James R. Gray and himself treating the social and economic sections of the DEIS. Verbatim transcripts of the public hearings are available for review at the BLM District Office, Albuquerque. All testimony received at the hearings was subsequently sent to the BLM in an expanded transcript.

Letters

During the public review period, 12 comment letters were received. (Refer to Table 4-1 for a list of these letters and the major areas of concern expressed in them.) Each letter was reviewed to determine if it met the criterion required for response in the FEIS, that is, whether or not it discussed the adequacy of the DEIS. Comments that presented new data, questioned facts and/or analyses, or commented on the issues bearing directly on the DEIS or the environmental impacts of the Proposed Action and alternatives were fully evaluated and responded to. Resultant changes or additions to the text of the DEIS have been incorporated into this FEIS as the Modification and Corrections section following this Chapter 4.

Pages 8 through 37 reproduce all comment letters received. Comments are keyed to the control number of the letter in which they appear (comment 12-D is the fourth comment in letter No. 12). The responses, in some cases, go beyond the scope of the specific comment, in order to adequately cover other related comments and to maximize the cross-referencing of responses.

PREPARATION OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT

This Final EIS contains additions and corrections to the Draft EIS in response to the public comment letters, internal BLM review, new or more complete information, and changes in BLM guidance since release of the DEIS. Where changes are of a minor editorial nature, the pages changed are not reproduced. Rather, the editorial changes are included in a list of Errata, which begins on page 41 of this FEIS. Pages changed to a larger extent are reproduced with the changes underlined. The DEIS Summary (pages ix-xx) has been reproduced at the beginning of this FEIS, and changes in this section are also underlined.

CONTRIBUTORS TO THE DOCUMENT

The listing beginning on page 38 (Table 4-2) includes contributors to this FEIS, including report writers, preparers of the background documents, and support personnel.

TABLE 4-1

COMMENT LETTERS RECEIVED AND AREAS OF CONCERN

No.	Agency or Individual		No Response Necessary	Physical Setting	Vegetation	Soils	Water Resources	Air Quality	Wildlife	Wild Horses	Livestock Grazing	Forestry	Recreation	Wilderness	Other Land Uses	Cultural Resources	Visual Resources	Social and Economic Conditions	General
01	Phil and Betty Harris	6/16/80	x																
02	Farmers Home Administration	6/24/80	x																
03	National Council of Public Land Users	6/27/80																	x
04	State of New Mexico, Dept. of Finance and Administration	7/2/80	x																
05	Advisory Council on Historic Preservation	7/2/80	x																
06	US Environmental Protection Agency	7/14/80			x		x		x		x					x		x	
07	Mary Beth Truby	7/14/80							x										
08	State of New Mexico, Office of the Governor	7/15/80	x																
09	F. F. Montoya	7/25/80	x																
10	Defenders of Wildlife	7/25/80							x		x							x	x
11	State of New Mexico, Department of Game and Fish	7/28/80	x																
12	Range Improvement Task Force, Cooperative Extension Service, New Mexico State University	7/28/80			x	x	x		x	x	x	x						x	x

1

My Comments Pertaning to the "San Juan Grazing Management Enviromental Impact statement" is this; I feel it has cost the taxpayrs a fortune to do the survey and compile this book:

I also feel we have more government Control on our business than we can handle at this time: my feeling about hiring some educated idiot to tell us how to run our business is absurd:

This country was founded on "free Enterprize and how long is it gonna take the Government and all their Committees to flush this –

Thanks
Phil & Betty Harris
2503 Ridgewood dr
Farmington NM 87401
Phone 287-3873

My feeling about the money used for this nonsense could have done a great deal for the handicaped, disabled Veterans, Senior citizens etc:

A Copy of this letter is going to the U S Congress men from NM also U.S Senators, also a Copy of this reply:

UNITED STATES DEPARTMENT OF AGRICULTURE
FARMERS HOME ADMINISTRATION
Room 3414, Federal Building
517 Gold Avenue, SW
Albuquerque, NM 87102

2

June 23, 1980

U. S. Department of the Interior
Bureau of Land Management
3550 Pan American Freeway N.E.
P. O. Box 6770
Albuquerque, NM 87107

Attention: L. Paul Applegate
District Manager

Dear Mr. Applegate:

As requested by your organization, the Farmers Home Administration (FmHA) has reviewed the draft of the San Juan Grazing Management Environmental Impact Statement.

The FmHA has decided that this is an excellent report and we support the Bureau of Land Management's draft Environmental Impact Statement.

Sincerely,

Drew Cloud
DREW CLOUD
State Director

Farmers Home Administration is an Equal Opportunity Lender.
Complaints of racial or ethnic discrimination should be sent to:
Secretary of Agriculture, Washington, D.C. 20250

3

National Council of Public Land Users
P. O. Box 811
Grand Junction, Colorado 81501

Paul Marwell, President
Herbert Snyder, Secretary

24 Jun 80

Mr. Ralph Sena
BLM Albuquerque District Office
3550 Pan American Freeway, N.E.
Albuquerque, New Mexico 87107

Dear Sir:

Thank you for the Dreft San Juan Grazing Management Environmental Impact Statement.

3-A It is requested that under Chapter 2, Effected Environment, Social & Economic Conditions , that the following information be included. This information is considered absolutely essential to analyze multiple use costs vs benefits.

WHAT ARE THE ANNUAL COSTS OF:

1. Administering the grazing program? $__________
2. Loss of non-replaceable topsoil from erosion of the watersheds? $__________
3. Topsoil being deposited in expensive water reservoirs? $__________
4. Treating polluted water from the watersheds for domestic use? $__________
5. Irrigating with high saline water from overgrazed watersheds? $__________
6. Elimination of wildlife supposedly competing for food? $__________
7. Damage to fish resulting from polluted water? $__________
8. Damage to all aquatic life due to unstable stream flow resulting from flooding and drouth? $__________
9. Farmers having to compete with grazing on BLM lands at $2.50 an AUM? (This compares with baled hay at about eight (8) cents a bale). $__________
10. Lost precipitation resulting from solar thermals from reflected bare ground in an environment where the annual precipitation is several times less than the natural evaporation? $__________

Yours truly,
Herbert Snyder
Herbert Snyder, Secretary

Copy to: Natural Resources Defense Council

3-A. A benefit/cost analysis would be done on each allotment at the time of the site-specific program implementation. BLM's benefit/cost analysis uses standard procedures that take into account Item 1 as listed in your letter. The analysis does not include Items 2 through 10. A copy of the benefit/cost procedure is available at the BLM District Office in Albuquerque. Projects not meeting the benefit/cost ratio of at least 1:1 would not be implemented unless irreparable resource degradation or damage would occur without project implementation.

4

Bruce King
Governor

State of New Mexico
Governor's Cabinet
Department of
Finance and Administration
Office of the Secretary
David W. King

421 STATE CAPITOL
SANTA FE, N.M. 87503
TELEPHONE (505) 827-2066

July 1, 1980

L. Paul Applegate, District Manager
Bureau of Land Management
3550 Pan American Freeway, N.E.
Albuquerque, New Mexico 87107

Dear Mr. Applegate:

I appreciate your sending me a copy of the draft environmental statement for the proposed San Juan Grazing Management Program.

This environmental impact statement has been entered into the A-95 Clearinghouse review system at the State Planning Division. The State Application Identifier (SAI) number is 80 06 11 146.

If you have any questions regarding review of this document, please contact Betsy Reed at (505) 827-5191. Ms. Reed is coordinating review of this document which should be completed by July 28, 1980.

Please let me know if my office can be of further assistance.

Sincerely,

David King
David W. King
Secretary

DWK:bc

5

Advisory Council On Historic Preservation

1522 K Street, NW
Washington, DC 20005

June 30, 1980

Mr. L. Paul Applegate
District Manager
Bureau of Land Management
3550 Pan American Freeway, N.E.
P. O. Box 6770
Albuquerque, New Mexico 87107

Dear Mr. Applegate:

This is in response to your request of June 5, 1980, for comments on the draft environmental statement (DES) for the San Juan Grazing Management Plan.

Pursuant to its responsibilities under Section 102(2)(C) of the National Environmental Policy Act of 1969, the Council has reviewed the Bureau of Land Management's DES and has determined that there appears to be no reason for the Council to comment at this time.

Sincerely,

Louis S. Wall
Chief, Western Division
of Project Review

6

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

July 8, 1980

Mr. L. Paul Applegate
District Manager
Bureau of Land Management
Albuquerque District Office
P.O. Box 6770
Albuquerque, New Mexico 87107

Dear Mr. Applegate:

We have reviewed your Draft Environmental Impact Statement (EIS) for the San Juan Grazing Management Program which includes portions of San Juan, Rio Arriba, and Sandoval Counties, New Mexico. This program proposes to allocate vegetation acreage to livestock, big game, and wild horses; determine the levels of livestock grazing management; identify needed livestock support facilities; outline a general implementation schedule; list the standard procedures for operation; and discuss the interrelationships with other programs in the area.

We offer the following comments for your consideration in preparing the Final EIS:

6-A On pages 3-12 and 3-13, the vegetative treatments to be used in the Maximization of Livestock Forage Production Alternative are listed and include the suggested use of 2,4-D on 25,705 acres to control sagebrush. Because the use of 2,4-D has been temporarily banned by the Environmental Protection Agency, alternative control methods should be considered. A discussion of the effects which the selected alternative will have on livestock, wildlife, water resources, soils, air quality, wildlife habitat, and threatened and/or endangered species would strengthen the Final EIS.

6-B On page 3-20 it is stated that, "Livestock watering would increase to 125 acre-feet under the Proposed Action, a 34-acre-foot increase from the existing situation." The various increases in water use for each alternative is shown in Table 3-7. However, it is not clear whether the range developments will meet the increased needs of both livestock and wildlife adequately.
6-C Please include information concerning the adequacy of the range developments to meet these needs/as well as information about the mitigation measures for dust generation and erosion that may be caused by the range developments
6-D Steps to minimize damage to riparian habitats from livestock grazing should also be included in the Final EIS.

6-A. The status of the use of 2,4-D for controlling sagebrush on rangeland was checked and it was found that this use is not temporarily banned. This is verified by the letter (dated July 28, 1980) to Mr. L. Paul Applegate from Clinton B. Spotts (attached after Letter #6). However, should this use be banned in the future, policies listed as numbers (1) and (2) in the second paragraph on page 1-17 of the DEIS would preclude the use of 2,4-D. The policy numbered (3) in this same paragraph states that an Environmental Assessment (EA) for each spray project would be completed prior to spraying for sagebrush control. This EA would include evaluation of all reasonable alternatives (including alternate control methods) and would be done specifically for the site on which the sagebrush control is proposed. The decision as to which control method may be used would be made after completion of the EA.

6-B. The increased needs of both livestock and wildlife would be met. The increases in water use associated with each alternative represent a direct conversion of AUMs to acre-feet per year. It is assumed that virtually all of the increased use will come from development of ground water resources in the area. There are very few places in the Planning Unit where there is not enough accessible ground water for livestock use. The purpose of the water developments included in the Proposed Action is to improve the distribution of livestock. Through development of water sources, forage that was previously unavailable for grazing would become available. The water developments planned for the Proposed Action were identified by range specialists as necessary for harvesting the allocated forage. If another alternative is selected, water developments would be adjusted according to the needs identified by the range specialists.

6-C. Measures to limit dust generation and erosion are shown under the heading of Standard Operating Procedures in the DEIS (pages 1-11 through 1-13). The procedures that would apply to dust generation and erosion are numbers 2, 3, 5, 8, and 9. These procedures would generally limit road construction, limit the size of areas to be disturbed by the project, require revegetation of disturbed areas, require phasing of projects that would disturb large areas and avoid areas with steep slopes and soils in the critical and severe erosion condition classes.

6-D. Damage to riparian habitat would be minimized under the Proposed Action and all alternatives (except the No Action Alternative) through the adjustment in livestock numbers, and implementation of the proposed rest periods and monitoring studies. Fencing would be used to further protect riparian areas in which degradation continued after implementation of other measures (refer to page 3-25 of the DEIS).

6
cont'd

6-E Although it is stated that archeological losses will occur due to vegetative treatment and range developments, no mention is made of the type of archeological losses anticipated, nor of any planned mitigation measures. Appropriate corrections would strengthen the Final EIS.

6-F Indian lands are involved in the San Juan Grazing Management Program. The extent of their involvement should be discussed, particularly those of the Navajo Tribe.

We classify your Draft Environmental Impact Statement as ER-1. Specifically, we have reservations concerning the use of 2,4-D in vegetative treatment and the potential for erosion (wind and water). Our classification will be published in the Federal Register according to our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act.

Definitions of the categories are provided on the enclosure. Our procedure is to categorize the EIS on both the environmental consequences of the proposed action and on the adequacy of the Impact Statement at the draft stage whenever possible.

We appreciated the opportunity to review the Draft Environmental Impact Statement. Please send our office five (5) copies of the Final Environmental Impact Statement at the same time that it is sent to the Office of Environmental Review, U.S. Environmental Protection Agency, Washington, D.C.

Sincerely,

Francis E. Phillips, for
Adlene Harrison
Regional Administrator (6A)

Enclosure

6-E. Any disturbance affecting the cultural context of a site would reduce or eliminate the scientific value of that site. The types of site disturbance anticipated to occur under the PA and alternatives are discussed on pages 3-46 through 3-48 of the DEIS.

Resource mitigation measures have been incorporated as standard operating procedures in this document. Chapter 1 contains a listing of standard operating procedures that would be used in the construction of range developments and the application of vegetation treatments under the PA, MLFP, and EORV Alternatives. Committed measures pertaining to the mitigation of cultural resources are found in Item 1, page 1-11, and Item 18, page 1-13. An additional measure that would be applied under the MLFP Alternative appears in Item 8, second paragraph, page 1-17.

6-F. Indian involvement within the Planning Unit is discussed in the DEIS on pages 1-2, 1-19, 2-41, 2-43, 2-51, and 3-53. Indian lands would be affected by BLM management actions in the same manner as other non-public lands within the Planning Unit. Throughout the DEIS the direct effects on public land are discussed in detail. All other lands in the Planning Unit were given equal consideration, regardless of ownership.

6 cont'd

ENVIRONMENTAL IMPACT OF THE ACTION

LO - Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER - Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to re-assess these aspects.

EU - Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

ADEQUACY OF THE IMPACT STATEMENT

Category 1 - Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2 - Insufficient Information

EPA believes the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3 - Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement. If a draft statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make a determination.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

July 28, 1980

Mr. L. Paul Applegate
District Manager
Bureau of Land Management
P.O. Box 6770
Albuquerque, New Mexico 87107

Dear Mr. Applegate:

In response to your letter concerning the use of 2,4-D in the San Juan Grazing Management Program in New Mexico, your information is correct. There is not a ban in effect on the use of 2,4-D. However, we have enclosed information upon the current status of 2,4-D which may be of service to you.

We apologize for any inconvenience that we may have caused you.

Sincerely,

Clinton B Spotts

Clinton B. Spotts
Regional EIS Coordinator (6ASAF)

Enclosure

7

Counselor, New Mexico 87018
July 5, 1980

Bureau of Land Management
District Manager
Albuquerque District Office
P.O. Box 6770
Albuquerque, New Mexico 87107

Dear Sir:

I wish to go on record as opposing your draft of the San Juan Grazing Management Environmental Impact Statement.

My husband agreed to an Allotment Management Plan in 1970. We have followed this plan as closely as nature would allow. Now I find in your new EIS plan we are to be cut 37 %. I am quite sure I have as good or better a grass stand than many of my neighbors. Over the past six years we have had to reduce our AUM's because of lack of water. Have you ever hauled water to 85 cows when it is 20 degrees below zero? Even with my reduced herd I find it hard to do. Most ranchers will reduce their herds when they have had six dry summers. No one enjoys seeing the land devoid of all vegetation.

I would take issue with your statement on page 2-41, "Many ranchers perceive that their numbers are steadily diminishing partly because of the effects of what they beleive to be a recent drought, partly because of new requirements they see as being imposed by the federal government, and partly because of pressures they feel from rising costs and competition with other ranching areas." I have lived here for 28 years and I can assure you we are having a drought. The summer rains have become spotty or nonexistant. Years ago our dirt tanks always had water, now there is none. Even while my husband was alive, two and one-half years ago, we couldn't drill a well because of the government and the EIS statements. Do any of you people have any idea how much it costs to haul water at the price of gas nowdays? The repair costs on a truck or pickup have gone up immensely.

7-A I would also question your AUM's allotted for wildlife. I am sure mine is much to high in comparison with neighboring ranches. I know the deer population has decreased in recent years, not for lack of forage, but because of poachers and an increase in coyotes. We have only been allowed to poison the prarie dogs once. I have one mesa that is infested with them and so the crested wheat grass has suffered. The cattle do not kill the root system.

There have been very few improvements made since we have been on the AMP system. A new pasture fence dividing the mesa and a spring that has been reworked, and now produces less water than ever. I notice in your EIS plan we are not getting much help either.

Since we have not been allowed to make any improvements we did have to reduce our herd size. I now have children who are out of school and who are willing to help haul water, so I have been slowly increasing the herd. If your reduction stands it will hurt us financially, now, and in the future.

In closing I would like to know why the oil and gas industry is allowed to build new locations which stand idle for months until the well is drilled? This takes much good land out of grazing production. I have several locations on my crested wheat pasture. Many times this land is not reseeded for over a year after the well has finally been drilled.

Since my husbands death I have tried to follow our AMP program as it was originally made out. No one is sorrier than I about the continued drought; but I do protest your cuts and will do everything in my power to get them changed.

Sincerely,

Mary Beth Truby

Mary Beth Truby
Allotment Number 5116

7-A. The Proposed Action includes 102 AUMs for wildlife on Allotment 5116. This figure is 98 AUMs less than the number originally set in 1965. This difference is because of the noted decrease in the wildlife needs in this particular area. Adjacent allotments have been adjusted according to wildlife needs and projections (for methodology refer to Appendix C-12 of the DEIS).

8

STATE OF NEW MEXICO
OFFICE OF THE GOVERNOR
SANTA FE
87503

BRUCE KING
GOVERNOR

July 11, 1980

Mr. Paul Applegate
District Manager
Bureau of Land Management
Albuquerque District Office
P.O. Box 6770
Albuquerque, New Mexico 87107

Dear Mr. Applegate:

Mr. Larry L. Woodard has requested my review and comments on the Draft Environmental Impact Statement for the proposed San Juan Grazing Management Program.

This is to advise you that Dr. William P. Stephens, New Mexico's Secretary of Agriculture, will be submitting comments on my behalf. In addition, I want to thank you for allowing my office to have input on this important document.

Sincerely,

Bruce King

BRUCE KING
Governor

cc: Mr. Larry L. Woodard
Dr. William P. Stephens

9

My name is F.F. Montoya, a rancher from La Plata, New Mexico, San Juan County and La Plata County in Colorado. I would like to ask for an extension of time to study this environmental impact statement. We have had less than a month to study a book that took several people 3 to 4 years to write. You could not have picked a busier time of the year - with livestock being moved to higher pastures and acres of hay to put up.

In chapter 2, page 2-23, major problems affecting livestock production and management are listed in order of importance: (1) Unrehabilitated well pad and right-of-way areas; (2) Large numbers of roads; (7) Poor allotment boundary fences; (10) Unauthorized (trespass) livestock; (11) Vandalism. In every case the BLM has helped to contribute to these problems and is responsible for allowing much of it in our area.

Last fall when we came back to winter pasture, we found a new road built across private and BLM lands through to the joining allotment. The fence we built and maintain was cut in order for the road to go through. At that time we checked with the BLM, no one seemed to know anything about it. This spring when the rig was moving in we found out from the oil company that a BLM representative had given them permision to build the road, cut the fence and go through. The oil company could have gone up the highway and directly into the other allotment and saved several miles of grass, a fence, and a lot of hard feelings.

9,
cont'd

On another 40 acre tract of BLM land surrounded by my private land, BLM has given an oil company permission to make a well pad. I have a stock pond near by on private land that will be filled with silt if this well is allowed to be drilled. There is an existing road within a few feet of the sight;but they have staked for a new road to the well. Why allow them to ruin my pond and all the additional grass for a new road?

If lands are protected, and this type of unnecessary damage be prevented BLM would not need to consider cutting livestock numbers. It seems BLM should consider trading or selling small tracts of land with the land owner, or what ever is best for the protection of our land.

Ranchers can not afford to build fences while BLM cable and spray to let the grass grow. We are having trouble with lending institutions as it is and can hardly make ends meet now. Costs would be prohibitive. This San Juan Grazing Environmental Impact study was made during one of the worst droughts of my lifetime. The cattle were all fat and lots of feed left when we moved this spring. That's a good sign. We have enough feed for the numbers we have.

Land owners should be compensated for feeding wild life if they are going to be cut to preserve them. In chapter 2 page 2-24 Recreational: Jones Canyon should not be taken out for primitive or wilderness areas. Cows eat grass and are rather primitive. We do not need any more wilderness areas, we need food and stockmen can not be buying and selling cattle at BLM's desecration. We have to be able to follow the market to stay above water.

Chapter 2 page 2-41, Reasons for leaving the ranch are

stated as recent drought, Requirements imposed by Government and rising cost. Grazing fees went up drasticly!

Ranchers are getting older and tired, nobody else wants to work the long hours. They do not get paid vacations and after a life time of fighting to feed the country and balance the foreign trade they are being forced out of business. Ranchers do deserve to make a profit and retire, just like anyone else. If the next generation can't make a living working 14 - 16 hours a day - maybe they're smarter than we were. We are all going to suffer because we still have to eat and you are right, "We are the endangered species," so you better help protect us.

I feel very strongly that we should be allowed more time to study and evaluate this environmental impact statement.

Sincerely,

P.F. Montoya

P.F. Montoya

10

COMMENTS ON THE DRAFT SAN JUAN GRAZING MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

by

Aubrey Stephen Johnson, S.W. Representative
Defenders of Wildlife
13795 North Como Drive
Tucson, Arizona 85704

The Bureau of Land Management has produced a DEIS that is superior in many respects to most of the ones done previously. The information contained is arranged conveniently and sensibly, making the many repeated references to critical pages an easy exercise.

The Social and Economic sections of the DEIS were unusually forthright and complete, making further calculations by the reader much easier than in the past. Also appreciated was the great attention devoted to wildlife, and the frank discussion concerning the competition between certain wildlife species and livestock. It was particularly gratifying to note that the Proposed Action would result in a long-term increase of 65.2% more wildlife AUM's compared to a livestock AUM increase of 23.3% during the same period of time.

The remarks that follow are not intended to be of an exhaustive nature, but instead will be directed mostly to an examination of certain economic criteria as related to livestock ranching, wildlife, and other non-ranching values.

All of the following remarks are based on the central premise that livestock grazing is an acceptable use of the public lands, provided that such use can be accommodated without harming the land itself or interfering in any way with other legitimate uses of such public land.

One of the important assumptions underlying the above premise is that livestock grazing on the public land be at a level consistent with the economic contribution of such grazing to the local economy. In other words, grazing interests should not exert

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an influence on the management of public lands that is disproportionate to their economic importance. (The past history of grazing practices shows clearly the end result of such disproportionate influence. Indeed, the San Juan E.I.S. itself is a testimony to the consequences of defacto single-use management on land that is multiple-use in name only).

Of the total acres available for grazing in the San Juan Planning Unit, 84% is in fair or poor condition. This figure includes private, state and federal lands, and was calculated from the information furnished in the Draft EIS for the above area. Since this condition is obviously one of long standing, it is difficult to be optimistic about the projected increase in forage production during the time span involved. Because it is likely that the plants will not respond as predicted, it is vital that BLM not get "locked into" promises it cannot keep.

10-A On page XI of the summary, it is stated that both deer and antelope would continue to compete with cattle under the P.A. How does it then follow that no wildlife AUM increases are projected by the year 2000 under the alternatives "Elimination of Livestock Grazing" and "Enhancement of other Resource Values"? If competition would indeed occur, it seems obvious that lack of such livestock competition would allow more wildlife AUMs to subsist on the increased forage.

Elsewhere (pg. 1-24), it is projected that elimination of livestock grazing would result in an increase of mule deer from 1,286 to 5,500, and that elk would go from 40 to 120 animals. In addition, the pronghorn would increase from 186 to a projected 600 with the elimination of grazing.

It seems obvious that the 2 previous paragraphs contain EIS data that is contradictory.

10-B According to pg. 1-6, the 952,516 acres of the San Juan unit that is not under any Allotment Management Plan is allowed only 608 Wildlife AUMs. Why? Are the 325,143 acres currently under AMP's in such good condition that they can support 88% of the wildlife AUM's on only 34% of the land? If this is true, why is the proportion of livestock AUM's nearly identical on both AMP and non-AMP acreage?

The total number of livestock on the San Juan unit is approximately 11,180 animals on 1,278,621 acres, for an average of one animal per 114 acres. The cost to the 260 ranchers using the 66,146 AUM's in 1978 was $156,104.56 (assuming a value of $2.36 per AUM). The average cost per acre, therefore, is approximately 8.2 cents per acre per year.

10-C The total livestock sales in 1978, according to pg. 2-50 of the Draft EIS, was $1,418,550, which means that each acre of BLM land produced a gross income of about

10-A. Wildlife AUMs and vegetation allocations were established through range surveys and field inventories. These figures were derived through the BLM's planning system and are not intended as limits of population size.

The potential vegetation allocations for wildlife under the PA and alternatives were based on New Mexico Department of Game and Fish and BLM estimates. These estimates were based on the fact that other limiting factors besides forage availability would curb population size.

Population increases for wildlife are clearly shown on page xv. Significant increases are evident in the ELG and EORV alternatives.

Forage competition between wildlife species and livestock would occur. Dietary overlap would take place: between livestock and antelope during early spring and summer for forbs; and between livestock and deer during fall and winter for browse.

10-B. Wildlife forage allocations on allotments for which AMPs have been developed reflect actual needs of wildlife populations. A continual updating of the AUM figures for wildlife needs was accomplished during the development of the AMPs over the ten-year period from 1965 to 1975. However, on allotments for which AMPs have not been developed, forage allocations for wildlife have not been adjusted to meet habitat needs. These allocations would be made as AMPs are developed under the Proposed Action and alternatives (except the No Action), and AUMs would be gradually adjusted by the year 2000 (refer to Appendix H-1).

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$1.11 per year. Each of the 260 sheep and cattle operations had a net yearly income of $1,263.33 per ranch, making a net cash income of $29.37 per animal, assuming an average herd of 43 animals per ranch.

10–C Cont'd By the year 2,000, BLM projects a net cash income of $1,619.55 per ranch or $37.66 per animal. In order to make this increase possible, BLM plans to spend $2,250,000 during the first nine years of the P.A. (p 3-53), an amount that averages $201.25 per livestock animal ($2,250,000 ÷ 11,180 animals). The result of this expenditure per animal could result in an increase in the net cash income of $8.28 per animal by the year 2,000, provided the land responds as predicted by the Draft EIS.

The above figures amount to a government subsidy of ranching, even before the addition of approximately $90,000 per year required to run the San Juan unit on a regular basis (1980 estimate from BLM office in Farmington).

In spite of such high government spending, the San Juan Draft EIS makes it clear that livestock grazing will never be an economic success in the area (p 3-58). In addition, it is stated that there will be "...little direct or indirect impact on the whole regional economy as a result of implementation of the P.A." (p 3-58)

Accordingly, it is time to ask a question that is perhaps politically naive, but ecologically and economically necessary. How long can the public and their land afford to subsidize a lifestyle that is based more solidly on myth and romance than on reality?

Ranchers' perceptions notwithstanding, their ranching lifestyle is not one that exhibits a high level of "...independence and self-sufficiency." (p 3-53) Their economic survival, as the Draft EIS makes clear, is possible due to outside income sources and the rising cost of land due to inflation and the limited number of AUM's. Even though outside jobs and increased loan values are the real reasons that most San Juan area ranchers stay in ranching, it has still been necessary to overgraze much of the BLM land. Even at an average stocking level of 144 acres per animal, the land still deteriorated, and could furnish all ranchers only 38% of their personal income. (p 2-51)

Thus the illusion of independence and self-sufficiency has been gained at the expense of land that is not their own.

10–D Nowhere in the 'San Juan EIS' was there any in-depth analysis of the Eliminating Livestock Grazing (ELG) Alternative. The attention given the ELG Alternative does not reflect the realities of the effects of livestock grazing levels in the San Juan area

10–C. The grazing fee charged by the BLM in 1978 was $1.51 per AUM. The present grazing fee is $2.36. The cost in BLM fees per acre should be figured by dividing the total charge for AUMs ($1.51 X 66,146) by the number of acres of public land within the grazing allotments (926,099).

The total livestock sales figure given on page 2-50 includes livestock from private as well as public land. The calculated return of $1.11 per acre per year would be the average return from livestock sales per acre, both public and private, within the allotments. The calculated net return per animal in the year 2000 (based on dividing forecast net cash income per rancher or $1,619.55 by the average herd size of 55—see Table 3-12), would be $29.45.

The BLM is mandated to manage public lands for multiple use purposes including livestock grazing. Accordingly, the development and management activities proposed are intended for multiple use benefit rather than to subsidize or exclusively benefit the ranch operators. Increases in forage production would result in increased returns for both the ranch operators and the BLM. The general population would have the benefit of improved ecology and more satisfying recreation opportunities. Wildlife populations are expected to increase as a result of improved forage and habitat.

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10-D Cont'd over the past 100 years. The overuse of the land by livestock has lowered the carrying capacity for all associated biota, yet the Draft EIS postulates the same number of wildlife AUM's for the year 2,000 under all five alternatives except the No Action Alternative (p 1-7)

It would be of great public value if the BLM would undertake a real analysis of the biological effects of the long-term presence of large non-indigenous ungulates on land that is extremely arid in nature and subject to extremes in temperature and rainfall patterns. The many marvelous adaptations of the native plants and animals to such conditions are well-known. The many self-protective mechanisms present in wildlife ecosystems, such as drouth-deciduous leaves, germination inhibitors, top roots, estivation, etc. evolved in the absence of man's livestock. Why do we manage such lands in ways that may short-circuit the efforts at survival of the native species? Why is it apparently assumed that there are empty niches available to support animals not present when the life patterns of an ecosystem were evolving? These are questions that must be answered if the West, in Bernard deVoto's words, is ever to stop "...shoveling the land into its rivers."

From a purely economic point of view, it is obvious that two of the five Alternatives are superior. Both the Elimination of Livestock Grazing and Enhancement of Other Resource Values, according to p 3-62 of the DEIS, result in a greater economic return to the area.

The ELG Alternative, for example, would produce a non-ranching income value of $6.62 per acre, according to the above data. Even with the level of grazing present in 1978, the San Juan area produced a non-ranching income value of $2.29 per acre, nearly three times the rancher income average of $1.11 per acre.

The Alternative that has the greatest long-term potential for the land, livestock values, wildlife, and all other multiple use values of the land is clearly the Enhancement of Other Resource Values (EORV) Alternative, assuming the accuracy of the DEIS data. This is the only Alternative that recognizes the need for "unallotted" AUM's for small game cover and habitat, watershed, and aesthetic purposes. The non-ranching economic values returned to the local-economy are nearly eight times the value of the total livestock sales in 1978, yet would still provide for 42,041 livestock AUM's. The ranching life-style would still exist, contributing important social values to the community as a whole, yet the entire local ecosystem would become multiple-use in more than name only. The public land would be truly public.

10-D. The intent or purpose of the San Juan Grazing Management EIS is to describe the existing environmental situation (Chapter 2) and impacts that each livestock grazing alternative would have on this environment (Chapter 3). Each alternative was analyzed to the same degree for each resource.

Additional wildlife AUMs that may be required above the allocated level of 16,630 AUMs in the ELG and EORV alternatives would be available from the "other" category (Table 1-2, page 1-7). AUMs in the "other" category are consumptive and non-consumptive AUMs and are more than adequate to meet projected wildlife needs by the year 2000, as shown in Table 1-4. (Also, refer to the response to comment 10-A.)

11

State of New Mexico

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DEPARTMENT OF GAME AND FISH

STATE CAPITOL
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87503

July 23, 1980

Mr. L. Paul Applegate
District Manager
Bureau of Land Management
3550 Pan American Freeway, N. E.
P. O. Box 6770
Albuquerque, New Mexico 87107

Dear Mr. Applegate:

I have reviewed the Draft Environmental Impact Statement, San Juan Grazing Management and wish to make the following comments.

Implementation of the proposed action should achieve the desired purposes which are to protect and enhance the vegetation resource which provides the foundation for watershed, livestock forage, forestry products, wildlife and wild horse habitat, recreation and aesthetic values, and socioeconomic values. The objective of the proposed action is to increase the amount of forage on a sustained annual yield. Because livestock grazing probably continues to be the dominating factor that effects vegetative cover, I suggest that the proposed monitoring program is important to the success of achieving the desired purposes of the management plan. Maximum utilization of the renewable vegetative resource is desirable, but only with protection and enhancement of other multiple uses.

The proposed range manipulation and water developments should have favorable impacts upon wildlife and wildlife habitat. I am also pleased to note that as range conditions improve a greater amount of vegetation will be allocated to wildlife.

Thank you for the opportunity to review and comment upon the draft statement.

Sincerely,

Harold

Harold F. Olson
Director

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NEW MEXICO STATE UNIVERSITY

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COLLEGE OF AGRICULTURE AND HOME ECONOMICS

July 25, 1980

Paul Applegate
District Manager
Bureau of Land Management
Albuquerque District Office
P. O. Box 6770
Albuquerque, NM 87107

Dear Mr. Applegate:

We appreciate the opportunity to comment on the San Juan Grazing Management Environmental Impact Statement. The Bureau is to be commended on their attempt to survey, record, and complete the Environmental Statement in the time period that was available. It is evident that much effort has been invested in the preparation of this statement.

The following comments were prepared by the Range Improvement Task Force at New Mexico State University. The Task Force is an interdisciplinary team of specialists in Range Ecology, Range Brush and Weed Control, Wildlife, and Economics. Additional inputs were received and incorporated in the statement from faculty members of the New Mexico State University College of Agriculture.

The comments are intended to be directed at the processes and methods in the draft statement, and are not directed toward any one individual or individuals within the Bureau of Land Management. When individuals or an organization expend as much effort and time in a project such as this Environmental Statement, any criticism of the statement many times is confused with criticism of an individual or organization. We trust that these comments will be received in the light of addressing the process and not be taken personally by anyone within the Bureau of Land Management.

Respectfully,

Jerry G. Schickedanz
Coordinator
Range Improvement Task Force

/gw

Enclosure

New Mexico State University is an equal opportunity employer. All programs are available to everyone regardless of race, color, or national origin. New Mexico State University and the U.S. Department of Agriculture cooperating.

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An Analysis of the
Draft San Juan Grazing Management
Environmental Impact Statement

by

Range Improvement Task Force
New Mexico State University

While parts of the Draft San Juan Grazing Management Environmental Statement (ES) provide an excellent base for initiating planning, the draft ES does not provide adequate justification for the severe consequences that will result from its implementation. The Bureau of Land Management (BLM) is charged with considering the many and varied uses of the public lands, but there is no guarantee that some of the management proposals will not detract from the very uses they are intended to enhance. The BLM would be well sdvised to proceed carefully to insure thst problems are solved rather than new ones created.

RANGE

With respect to the range survey and grazing capacity methodology; there basically seems to be nothing wrong with the field procedures for collection of cover and composition data from the range survey. However, users of such information need to be aware of the limitations. Calculations of stocking rates by methods used in the ES involve four independent estimates, each associated with certain error: cover and composition determinations from the range survey, proper use factors, forage acre requirements, and animal forage intake. When all of these are used in stocking-rate calculations the results may or may not be realistic.

12-A In setting proper use factors (PUFs), was season of the year used in making the judgements as PUFs are palability ratings and forage palatability changes with the season. Were annual plants given a PUF and recorded in the cover estimates?

12-A. Proper use factors (PUFs) used in the San Juan DEIS represent the percent of a particular plant species' weight that may be utilized without restricting the plant's forage-producing capabilities. The PUFs used were based upon those used in the past in the Farmington area. They were also based on field observations and forage preference as determined by microhistological analysis. Individual PUFs were identified for each forage species by class of livestock.

Cover estimates for annual species were not used in the determination of the base carrying capacity for each grazing allotment. The cover (and therefore the production) of these species is extremely variable (depending upon spring precipitation) and cannot realistically be anticipated. Allowances for significant amounts of annual production can be made through the use of a temporary non-renewable grazing license.

A total of 43 plots were used to determine the forage acre factors for the various vegetation types (see Table A below). The plots were established in areas receiving grazing use and were protected from grazing by a wire cage. Range condition was not determined prior to the establishment of the plots.

Climatic conditions during the study period (1976-1978) are found in Table B below. As can be seen from this data, the average annual precipitation during this period was only .01 inches less than the long-term average, while the average April-September precipitation was only .15 less than the long term average.

Response 12-A (Continued)

TABLE A

NUMBER OF PLOTS BY RAINFALL AND VEGETATION TYPE

Rainfall Belt (inches)	Vegetation Type	Number of Plots
6- 8	Grassland	4
8-10	Grassland	1
8-10	Sagebrush[a]	5
8-10	Pinyon-Juniper[b]	3
10-12	Grassland	1
10-12	Sagebrush[a]	8
10-12	Pinyon-Juniper	5
12-14	Sagebrush[a]	7
12-14	Greasewood	3
12-14	Pinyon-Juniper[c]	6
	Total number of plots	43

Source: BLM Files

Notes:
[a] Includes treated and seeded sagebrush.
[b] Includes treated pinyon-juniper.
[c] Includes treated and seeded pinyon-juniper.

Response 12-A (Continued)

TABLE B

COMPARISON OF PRECIPITATION AMOUNTS FOR THE LONG TERM, 6-YEAR AVERAGE LICENSED USE PERIOD, AND SURVEY PERIOD

Reporting Station	Long-Term Average 1950-1978		6 year average 1973-1978		3 year average 1976-1978	
	Average Annual Precip.	Average Growing[a] Season Precip.	Average Annual Precip.	Average Growing Season Precip.	Average Annual Precip.	Average Growing Season Precip.
Aztec Ruin N.P.	8.88	4.32	9.37	3.97	9.88	4.36
Bloomfield	7.83	4.25	9.06	4.38	8.54	4.21
Farmington	8.23	4.19	8.71	3.80	8.68	3.82
Fruitland	7.23	3.73	8.09	3.64	7.23	3.30
Lybrook[b]	10.68	5.89	10.03	6.21	8.07	6.28
Navajo Dam	10.92	6.03	11.02	5.50	11.55	5.66
Otis	9.25	5.54	8.69	5.26	9.00	5.27
Average of all stations	9.00	4.85	9.28	4.68	8.99	4.70

Source: National Oceanic and Atmospheric Administration.

Notes:
[a] Average growing season precipitation for forage species includes the months of April through September.

[b] The Lybrook station was deactivated after 1977.

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12-A Cont'd How many plots were in each rainfall-vegetation type and used to determine the Forage Acre factor? Were they placed on properly managed rangeland or did they come from areas that did not receive grazing pressures? Readings from these two areas will give different readings. Was range condition considered in placement? The mapping units do not represent range sites.

What was the climatic conditions associated with reading the study data and also during the actual survey? The data supplied in the example calculations show a range of over 60 percent variation between years which is probably due to climate.

Suitability criteria for livestock grazing have been objected to before by NMSU and the objection still stands. The use of soil surface factors in the suitability criteria and range condition have also been criticized and we feel they are very subjective, arbitrary and mathematically incorrect. How can a zero rating have four possibilities from 0 to three?

Range condition ratings using SCS range site methodology of composition based on weight are not directly comparable to composition based on mapping units.

The range trend indicies have some validity if they have been in place long enough to show trends of management and not climate.

12-B Originally, the ocular reconnaissance method was intended to provide trial stocking rates, and not to be used for the basis for livestock adjustments in stocking rates. The BLM Ocular Reconnaisance Forage Survey Handbook (BLM Manual 4412.11A, 1963) states "Capacity estimates are valid only at the time the survey is actually conducted and are properly used only as a starting point in management." "They will be used primarily for initial adjustments in stocking rates or ranges which have not been subjected to reliable forage production on grazing capacity studies, and for equitable allotings to users and proper distribution

12-B. The ocular reconnaissance method was not used in the determination of carrying capacity for the San Juan Planning Unit. The method used is described in Appendix C-1 of the DEIS. It consisted of multi-year production studies used in conjunction with actual cover estimates. The carrying capacities determined by this method are only intended to be used for initial adjustments in stocking rates. Actual use, utilization, trend, and other monitoring studies will be initiated and conducted over a number of years to determine the long-term carrying capacities of the various grazing allotments.

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12-B Cont'd of grazing use."

Such surveys, when conducted only for one year, are not very sensitive and can hardly serve as the basis for stocking-rate adjustments. These surveys may serve to flag allotments where situations need close scrutiny.

12-C Cover estimates as made in the ES survey are among the poorest in accuracy when tested against other methods. This is a very important consideration when cover is used then to estimate forage production and in turn stocking capacity.

12-D The RITF has never endorsed a single year's range survey to set carrying capacity, but recommends that capacity adjustments be made on monitoring studies of condition, trend, and utilization. We also fully support the Section 8 rangeland consultation policy set forth by New Mexico BLM and incorporation of the Zimmerman report into the ES decision documents.

The San Juan Grazing Management Environmental Impact Statement suggest, as a result of the BLM planning process and range surveys, four alternatives in addition to the proposed action. The proposed action includes four essential elements; (1) adjustments of livestock numbers; (2) changes in livestock grazing by implementing minimum rest periods; (3) a brush control and reseeding program; and (4) construction of new range developments.

The five alternatives listed in the ES differ from the proposed action in that (1) the No Action (NA) and Elimination of Livestock Grazing Alternatives (ELG) do not include any of the above four items; (2) the Enhancement of Other Resources Values Alternative (EORV) does contain the four items but considers a lower level of livestock use; and (3) the Maximization of Livestock Forage Production Alternative (MLFP) includes the four items but provides for a more intensive brush control program.

It is important to note the differences in these alternatives because of the high degree of similarity between them. Basically they range from a do

12-C. The method used to estimate cover consisted of a minimum of ten 3 foot X 3 foot plots for each vegetation subtype within each grazing allotment. Each of the plots were gridded into 100 equal areas prior to estimating the cover of each species. The gridding of the plots greatly improved the accuracy of the estimates as compared to methods using an ungridded plot, point pace, or ocular estimates without a plot.

12-D. As mentioned on page 1-4 of the DEIS, results of the range inventories would be used as a starting point to determine the need for adjustments in livestock, wildlife, and wild horse grazing use. Future adjustments in grazing use as determined by the monitoring studies would be initiated through the Rangeland Consultation Policy (P. L.-95-514, Section 8 - Consultation and Coordination).

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nothing approach (No Action) to more intensive management (i.e. MLFP). The proposed action is an attempt at compromise.

12-E It is unclear why the San Juan district area proposes a compromise alternative when the purpose of a proposed action is to protect and enhance range resources. If the objective of the San Juan district area is to benefit the vegetation resource which is the foundation for all other range resources, then the proposed action is not the best alternative of choice.

Using the guidelines provided by the ES the Maximization of Livestock Forage Production Alternative (MFLP) is clearly the superior alternative. The MLFP which is a misnomer and should more appropriately be entitled Maximization of Range Resources, exceeds the PA in 8 out of 14 possible impacts summarized (see summary of impacts, pages XIV to XX). The MLPF does not differ from the PA in four areas where impacts were examined. The summary of impacts list the MLPF to be slightly more detrimental than the PA in 2 areas (soils and wildlife). However, in these areas where the MLPA are thought to be more detrimental than the PA, particularly those dealing with wildlife, the conclusion is not supportable. The MLFP alternative offers the most imagination of the various proposals put forth, particularly in the area of range improvement and restoration so vitally needed on BLM land. An explanation of why this alternative or any of the other alternatives listed were not selected as the proposed action is not discussed in the ES.

Specific Comments - Range

pg IX The proposed action's sagebrush control program is recommended for only 54,119 acres or 5.8 percent of the district. However the MLFP alternative identifies over four times this amount of area (237,584 or 25 percent of the district) in need of vegetation treatments. The BLM should strive to enhance all lands under their jurisdiction and

12-E. The objectives of the Proposed Action (page 1-4 of the DEIS) are not to benefit the vegetation resource exclusively. Since the enactment of the Federal Land Policy Management Act of 1976 (FLPMA), the BLM is clearly given the responsibility of managing the public rangeland within the concepts of multiple use. The development of the Proposed Action and alternatives for this Planning Unit is a result of applying the BLM's Management Framework Planning process. This includes resource-use conflict resolution and an intensive public participation program aimed at involving the public in the decision-making.

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attempt to restore the natural ecological balance of these rangelands. The dominance of sagebrush, causing an imbalanced composition with grasses, will not be reversed without time and the vegetation treatments.

pg IX The proposed monitoring program to determining the affects of livestock adjustments should be implemented and include estimated livestock utilization patterns.

12-F pg XI Under the proposed action the vegetative treatments would change sagebrush and pinyon-juniper areas to shrub-grassland. The brush would not be eradicated from the areas. Please define the changes in cover after the vegetative treatments. Do the projected decreases in cover include brush only or do they also include grass? Will brush cover decrease and grass cover increase? Will canopy cover decrease but basal cover increase? Will not the increase in basal cover as a result of increased grasses enhance other range resources such as soil and erosion conditions?

12-G pg XIV-XX Under the MLFP alternative it is projected that upland game bird and non-game bird habitat will deteriorate. This first assumes all brush will be removed which is not likely to occur. However, if this does occur then the habitat alternative will be detrimental to birds preferring brush, (i.e. sage sparrow), but will enhance and benefit birds which do not prefer brush (i.e. savannah sparrow). The tradeoff is usually about equal. The San Juan district has more than its share of brush (32 percent sagebrush) versus grassland (only 3 percent) and should give more consideration to wildlife preferring a more balanced vegetative composition.

12-H pg 1-18 Interrelationships. Are there no existing interrelationships with New Mexico State University or New Mexico Department of Agriculture?

pg 2-2 The narrative on major vegetation types on Chapter 2 provides a good

12-F. The kill of trees expected from the pinyon-juniper chaining projects is about 70 percent. Kill of sagebrush is expected to be from 90 to 95 percent from plowing and 70 to 75 percent from chaining. Therefore, the expected changes could better be described as going from woodland or shrubland to grassland or grassland shrub aspect.

The changes in cover predictions are for the net effect. They include both a decrease in the sagebrush or tree component (canopy cover) and an increase in the grass component (basal cover).

The changes that would occur due to vegetation treatments would affect other range resources. The nature of the effects would vary depending on the area treated and treatment used. For example, if pinyon- juniper stands were chained (a treatment that leaves the brush dispersed over the surface) erosion would not be expected to change significantly. This is supported by results reported by Gifford (1975) from his evaluation of treated areas in Arizona, Utah, and Nevada.

Under the canopies of existing stands of sagebrush, there is a large amount of bare soil surface over which water flows whenever runoff occurs. The expectation is that erosion would decrease as soil surface cover increased, as reported by Aldon (1964). Either chaining or plowing would leave sagebrush residue laying on and in contact with the soil surface. In addition to this the grass cover is expected to increase. Therefore, erosion would be expected to decrease on treated areas in the long term, although erosion from plowed areas may be increased during the first year after treatment. This was found to occur in the study by Gifford (1972).

12-G. Increased use of upland areas by livestock would cause greater stress among many populations of upland game and non-game bird species. This stress would appear as decreased nesting success and abandonment of breeding grounds in many areas.

12-H. The Interrelationships section on Page 1-18 of the DEIS has been revised to include the Cooperative Extension Service at New Mexico State University and the New Mexico Department of Agriculture.

description of vegetation in this region.

SOCIO-ECONOMICS

The draft of the San Juan Grazing Management ES is a well written document; the virtues of readibility and cohesiveness are apparent throughout the manuscript. The socio-economic sections are much more than demographic descriptions. The write up of the potential impacts of management adequately reflects the large degree of hardship that may be inflicted upon certain subsets of the ranching community.

12-I The impacts go beyond economic horizons, although these are also quite substantial. It is evident that there was an attempt at income redistribution under the auspices of range management in the San Juan ES. The realignment of AUM's toward the subsistance rancher type is undefensible under criterion of economic efficiency. Is the BLM attempting to undertake social welfare administration?

12-J Table 1-1 displays Livestock Federal Preference and Livestock Active Use Permitted; why was a six year average of licensed use used? Is this a period of below normal rainfall which would minimize the difference between actual use and the proposed action?

12-K A recent study conducted by the RITF entitled Market Values of Federal Grazing Permits in New Mexico determined that the average value of a BLM permit was $829 per A.U. and 100 percent deeded A.U. in the northwest was valued at $2,875 per A.U. as fair market value for a working ranch in its highest and best use in northwestern New Mexico.

From these figures on land valuation it is apparent that the summation of land values for the San Juan ES area for federal and deeded acreages is 22 million dollars when based on historical preference. With the short run

12-I. The realignment of AUMs toward subsistance ranching operations was a result of the BLM's evaluation and adjustment of grazing levels in accordance with range inventory data, rather than an action intended to make those operations economically efficient.

As indicated on page 1-2 of the DEIS, the Proposed Action was developed through the land use planning process using range inventories as an indication of present forage production. The adjustments proposed are those considered necessary to bring licensed use of the allotments more in line with estimated existing forage production. The BLM is not attempting to undertake social welfare administration.

12-J. The six-year average licensed use figure is believed to represent a more reasonable value for comparison than actual livestock use during any one year. Licensed livestock use over the six-year period has fluctuated greatly and has been unpredictable. Reasons for fluctuations in livestock use are unknown, but in many cases are not directly related to rainfall. Rainfall records indicate that the average annual rainfall (all stations) over the six-year period was slightly above the average long-term annual rainfall (9.28 inches vs. 9.00 inches). Average growing season (April through September) rainfall over the six-year period was slightly lower than the long-term growing season average (4.68 inches vs. 4.85 inches). Refer to Table B in the response to comment 12-A.

12-K. Figures in Appendix Table H-1 of the DEIS show that authorized grazing use would be 36 percent below historical preference. However, reductions in actual grazing levels on BLM land may not result in proportionate reductions on non-public land. Also, as a result of recent regulation changes, the sum difference between the authorized grazing use and grazing preference would be held in suspension, and the operators would keep their present qualifications. (Refer to the revised summary at the beginning of this FEIS for an explanation of suspended preference or non-use.) Thus, calculations of land value reductions based on anticipated AUM reductions are not valid at this time. Adding the reduction in value and the loss in loan potential counts the same reduction more than once.

12-K Cont'd implementation of the 39.2 percent reduction from historical preference it is apparent that there is a loss of wealth equalling 8.66 million dollars, in addition there is the further loss of loan potential of 3.86 million when based on 40 percent of total value. This sums to over a 12 million dollar hamstringing of the ranching industry in the ES area.

12-L The determination of ranch income from livestock sales for small, medium, and large commercial cow-calf operations is obviously understated. Was herd distribution accounted for in the sales price of livestock or was a single price used for all categories of ranch livestock outputs./ Ranch budgets for the northwest corner of New Mexico indicate a much higher gross sales revenue for all sizes of cow-calf ranching operations than presented in the budgets of the ES. The depreciation costs presented are also overstated. Was Internal Revenue schedules used for the average life expectancy determinations?

12-M The composite of understated gross returns and overstated depreciation presents an inaccurate representation of the income of the ranching industry. The end result is a gross underestimate of the direct economic impacts of the proposed numbers reductions, as well as underestimating the type 1 and type 2 indirect multiplier income impacts upon the local community in the shortrun.

12-N The proposed action indicates that vegetation treatments will change 1,360 acres of pinyon-juniper to grassland. We question the use of taxpeyers money being spent to plow or chain P-J. The economics of compounded initial treatment expenses and at least 2 years of deferment as an additional opportunity cost, in conjunction with less than 95 percent expected success and 10 year maintenance interval is certainly subject to question. Is it cost-effective?

Research conducted by the USFS in New Mexico indicate that with the current energy crisis resulting in very high fuelwood demand, the public can be used to

12-L. Ranch budget information was provided by the USDA Economic Statistics Cooperative Service located at Colorado State University. This information was verified for accuracy by Harbridge House, Inc. in conversations with representative ranchers in different ranch size categories. Herd distribution was accounted for in the sale price of the livestock.

12-M. Ranch budget information, including data on returns and depreciation, was verified for accuracy with the ranchers in the Planning Unit. The depreciation costs were based on the national budget (the depreciation schedule of which is updated annually).

Figures for full-time employment and personal income given in Tables 2-13 and 2-14 of the DEIS show ranching to be of relatively minor economic importance in the three-county area considered. Anticipated impacts of the Proposed Action on the regional economy are discussed on pages 3-53 and 3-54 of the DEIS.

12-N. The Proposed Action (PA) was developed from the BLM's Management Framework Plan recommendations for the San Juan Planning Unit. These recommendations included the chaining and seeding of 1,360 acres of pinyon-juniper. All of the projects included in the PA would be analyzed prior to their initiation. (See also the response to comment 3-A.)

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harvest the fuelwood. This provides revenue to the managing agency not expense. Valuable fuel energy is obtained, and the forage responds quite well to the reduced canopy coverage if seed stock is existent on the site. This approach of managing the P-J woodland as a multiple-use resource and not a liability may add a new dimension to the land management of the BLM.

WATER RESOURCES

12-O Surface water resources for the San Juan Planning Unit area are poorly documented in this Environmental Impact Statement. The ES claims that the Planning Unit contributes very little streamflow to the San Juan River. However, very few quantitative measurements are supplied to support this statement. Runoff rates were estimated for selected watersheds. These selected watersheds only represented 16 percent of the total planning unit. Why did the BLM neglect to estimate runoff for the entire Planning Unit? Were the estimates ever verified with field measurements? If they were verified, can the BLM provide data for this. If they were not verified, why?

SOILS

12-P Why does the BLM continue to use the PSIAC method to measure sediment production when this approach has been shown to underestimate the actual values (U.S.G.S. Professional Paper 700D, pp B245-B249, 1979)? The contractors for this ES (Earth Environmental Consultants, Inc.) sensed problems with this method by writing a disclaimer in their report to the BLM. This contractor claimed that they had "no way of knowing how close the estimated yield is to the actual yield." It is only their opinion that the yields are close to the actual values. They also expressed concern that the method "estimates gross erosion regardless of whether it is geologic or accelerated." The contractor also complained that

12-O. Information on the water resources of the Planning Unit are readily available in the USGS annual publication, Water Resources Data For New Mexico and the Final ES, Star Lake-Bisti Regional Coal. Analysis of USGS streamflow records (for the Animas, La Plata, and Los Pinos Rivers where they enter New Mexico, and the San Juan River where it enters and leaves New Mexico) indicates that New Mexico contributes about 15 percent to the annual streamflow of the San Juan River. The Planning Unit itself contributes only a fraction of that amount.

Runoff estimates for the entire Planning Unit cannot be made because of the local nature of convective storms and ephemeral streamflow common to New Mexico. Because areawide estimates of runoff would be meaningless, small, representative watersheds were selected to document local changes in runoff as a result of grazing management. The estimates for these small watersheds are only as good as the SCS curve number methodology allows.

Although runoff estimates from the curve number methodology have not been verified in the San Juan Planning Unit, the BLM is developing a runoff monitoring study for the Rio Puerco Grazing ES area (south of the San Juan Planning Unit). Results of this study should be applicable to the San Juan Planning Unit because climate, hydrology, and grazing management are similar for the two areas. If funding and workpower permit, a similar monitoring study will be designed for the San Juan Planning Unit.

12-P. A methodology was needed to estimate annual sediment yield of a large area (926,909 acres) of public lands. This had to be accomplished, within limited time schedules, while using procedures flexible enough to objectively analyze areas ranging from less than an acre to greater than 10 square miles in size. The PSIAC method addresses these problems better than other known methods. The ability of the user to properly rate the nine factors of the method is its strength, as there is flexibility to adjust with the introduction of additional information. Previous studies indicate that PSIAC does correlate with measured yields. By definition, the method develops an estimate of a relative range of values whereby one can objectively compare areas, treatments, and/or expected magnitudes of change over areas that range greatly in size. Expressing the values in specific units does not detract from the usefulness of the results, and provides some measure of the physical meaning of the numbers, even if approximate. An alternative methodology such as the Universal Soil Loss Equation was designed for developed areas, and has not been adapted and checked for use in vast areas of natural lands. It requires a sediment transport and channel erosion model to arrive at sediment production. A large number of small study areas would be required to develop estimates.

12-P Cont'd difficulties arose when estimating values for "upland erosion" and "channel erosion" because homographs were not provided for all rating items possible. In essense, sediment yield was not adequately measured for this Planning Unit, only grossly estimated. This section is too vague and as a result is unacceptable.

LIVESTOCK

12-Q The proposed action in the San Juan's Environmental Impact Statement indicates a 36 percent cut of cattle numbers from current grazing preference. Although this cut is rather large the effect will not be particularly felt in cattle numbers to a large extent because the average change from license use is 4.8 percent increase. On the surface this increase looks good but looking at individual allotments we find that 46 percent of the allotments will receive a cut from average licensed use. Since the average licensed use is figured on the years of the middle 70's which had been drought years, it means that ranchers have already pared down numbers for the drought period. Thus a further cut on 46 percent of the allotments will be serious to some individual operators.

In looking at the overall cuts some interesting figures can be derived. Of the allotments that currently have AMP's on them, 66 percent of these allotments will receive cuts whereas in the allotments that did not have AMP's only 43 percent of the allotments received cuts. Also, we find that the average change from licensed use on allotments with AMP's is a 9 percent cut. The average change from licensed use for those allotments without AMP's get about a 10 percent increase from licensed use. These same trends hold in East Roswell and East Socorro districts. The allotments with AMP's appear to be worse off than the allotments managed by the ranchers and did not have AMP's or intensive management programs.

12-R The San Juan statement uses essentially the same formula as was used in

12-Q. The proposed adjustments in carrying capacity would not affect the livestock operator's base property qualifications (preference). The difference between adjusted carrying capacity and operator's base property qualifications (preference) would be carried as suspended non-use pending the results of monitoring studies. As stated in the comment, 46 percent of the allotments will receive a reduction from the 6-year average of licensed use, leaving 54 percent of the grazing allotments receiving increases or no changes from this 6-year average. Although the reductions may have substantial effects on some operators, the method of implementation (individual agreements along with monitoring) should lessen much of the anticipated impact.

Climatological data (Table B, response to comment 12-A) does not indicate the middle 1970's to be a drought period. As identified in the response to comment 12-J, average annual precipitation was .28 inches more than the long-term average, while growing season precipitation was only .17 inches lower than the long-term average.

The grazing allotments with allotment management plans (AMPs) do show (on a percentage basis) more of a reduction than the non-AMP allotments. Factors which contribute to this effect are:

1. Only 8 of the 15 AMPs were fully implemented during the six-year averaging period. (Fully implemented means that all proposed management facilities such as fences, water developments, and land treatments have been completed, and a grazing system is in operation.)

2. Substantial land treatment projects resulting in increased forage production have been done on private and state-owned land by the livestock operators in conjunction with the AMPs. This increase in forage production does not appear in the EIS because it was not done on public land.

3. One of the allotments with an AMP has been receiving an annual license for 600 AUMs over the base property qualifications. The proposed carrying capacity does not include this 600-AUM increase because it is issued on an annual basis. The increase does show as part of the allotment's licensed use, however.

12-R. The 720 pounds per animal unit month was calculated using an average forage requirement of 24 pounds per cow per day. This is the quantity recommended for use by the U.S. Forest Service as identified by Stoddart, Smith, and Box (1975).

Various studies have been published, each indicating a different forage requirement. As reviewed by Seibert (1980), these studies show anywhere from 750 pounds to 1,200 pounds of forage may be necessary to support one cow for one month.

To the BLM's knowledge, no recent research to establish a forage requirement has been conducted in the Four-Corners area and published. A study is planned and will be conducted by scientists from Colorado State University near Hesperus, Colorado (approximately 10 miles from the San Juan Planning Unit) to determine this requirement. Results from this study will be used for future adjustments where needed.

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McGregor, Roswell, and Socorro districts for calculation of estimated carrying capacity. This formula uses pounds of intake of an animal unit to determine the estimated carrying capacity. Using a constant that is incorrect can have a drastic effect on carrying capacity. It is interesting to note that all four ES's use different figures for how much a cow eats. We do commend the San Juan statement in that they are using a figure that is more realistic than the other statements, however, there are areas where it itself is not realistic.

12-R Cont'd

We basically do not feel that any one single intake figure should be used in a formula such as this to determine carrying capacity. Cattle intake can vary tremendously due to: size of animals, percent calf crop, weaning weight of the calf crop, as well as the type of country, supplemental feeding programs, and seasons of use. We feel that carrying capacity should be set only by using a system of range monitoring to determine a trend and utilization. Throughout the San Juan ES the figure of 720 pounds was used as an intake per month for animals.

We have calculated the year around intake of animals considering the different times and stages of production, in other words, lactating, dry, etc. The program takes into account the size of the cow; the number of months she will be lactating heavy, the number of months she will be lactating at a lower rate, as well as months that she will be dry or in the last 1/3 of gestation. We also calculated the intake of the calf for the period of time calves are running with the cows and the amount of grass that they eat during this time as well as considering the percent calf crop on the total number of cows and calves.

Based on a 1,000 pound cow with a 75 percent calf crop which would have a weaning weight of 375 pounds, our calculations predict an intake of 656 pounds per month on a yearlong basis.

12-R Cont'd

The San Juan varies from other impact statements in the fact that many of the allotments in the San Juan are seasonal use allotments rather than yearlong. Forty-seven allotments are yearlong, sixty-three are winter and spring, and twenty-eight allotments are summer or fall. Some of the allotments overlap seasons of use but the majority are seasonal allotments rather than yearlong. The problem with an intake figure comes in that the intake of cattle on the winter use allotments is considerably less than those grazing in late spring or summer. This is due to the lactation requirements of the cow. We feel that for a winter and early spring use an intake figure of 540 pounds should be used per animal month. This is not far off from some of the figures used by BLM if we work backwards. For example the San Juan statement indicates ten antelope equal one cow. In the technical note by Loren D. Anderson and Jeff Denton the authors reported an intake during the winter of antelope to be fifty-four pounds per month. Ten times fifty-four is five hundred forty (540) pounds per animal unit month which is exactly the figure that we recommend for winter or early spring grazing livestock. However, throughout the ES 720 pounds are used. The use of 540 pounds versus 720 pounds would mean the difference in carrying capacity of 25 percent to begin with.

We would ask that the BLM present, in the final ES for the San Juan, justification for using 720 pounds intake per animal unit month. This should be scientific documentation based on recent research by competent range nutritionists and not refer to a general definition written 10 years ago before methodology was developed to measure intake of cattle on range.

Another area of this ES that concerns us is the management of cattle on allotments which are required to receive rest one spring out of three. Many of the allotments in the ES are spring grazing allotments, and although the maps are not accurate enough to tell how many pastures are in an allotment, it

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appears that many of the allotments have only one pasture. Thus, in those allotments the rancher would be forced to find other grazing or feed his cattle during the period of time that rest is required. Many of these ranchers move their cattle onto the forest for grazing when they come off the BLM. However, the Forest Service will not allow these cattle to go on early and thus they may be forced to find private leased ground or feed their cattle for this period of time during the spring. Private leased ground is a rare commodity in most of New Mexico within economically feasible travel distance of these ranches. Even though the BLM states that there will be little problem in breeding programs and livestock management, we believe they are going to encounter some serious problems on many of these allotments unless cross-fencing is instituted. Even if several pastures currently exist any rancher trying to run a specific breeding program may have difficulties instituting a grazing system that will correspond with his breeding program. In other words, any rancher that needs separate herds during the breeding times will have difficulty in putting several herds together and still maintaining a proper breeding program.

12-S We ask that the BLM give serious consideration on the cattle intake figures or do not base their carrying capacity on such a formula but rather use current carrying capacity as a starting place and begin a range monitoring program to determine whether or not cuts should be made.

WILDLIFE

12-T All forage allocation to big game within the San Juan Grazing Environmental Statement is based upon methods described in Appendix C12, pages C25 and C26. The conversion rates that are listed include: five deer equal to one animal unit month; two elk; 10 antelope; and, three barbery sheep. Based on the fact that most of the livestock grazing occurs on the management area during the

12-S. Refer to the response to comment 12-D.

12-T. The conversions were based on professional judgements of the weights of the various animals being discussed.

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12-T Cont'd fall and winter months these conversion factors appear quite reasonable. However, how these conversion factors were arrived by the BLM is a complete mystery.

12-U The appendix of the draft states that animal unit months for big game were derived from a BLM technical note by Loren B. Anderson and Jeff W. Denton entitled Base Data Analysis Required for Forage Allocation dated November 22, 1979. The draft further states that the portion of the technical note used was "Determining Forage Consumption Rates for Big Game." I was unable to locate a technical note written by Anderson and Denton with that title for that date. However, I did locate a technical note by Loren B. Anderson and Jeff W. Denton entitled Determining Forage Consumption Rates for Big Game dated November 22, 1978. If this is in fact the same publication, and I think it is, the draft should be revised to show the correct title and year of publication.

According to this technical note, to calculate a wildlife conversion factor for animal unit months one first computes the pounds of intake per day per hundred weight of animal. Next, this number is multiplied by 30 days per month to derive pounds of intake per hundred weight of animal per month. For instances, a 100 pound antelope which eats 1.81 pounds of air dried forage per adult per day during the winter would consume 54 pounds of forage per month per animal. The technical note further describes the methods used to determine winter forage intake per month for big horn sheep, elk and deer.

12-V All the methods that are discussed in the technical note are based upon the forage intake per 100 pounds of the individual animal. The draft statement however states that the process in the technical note is based on the average weight of an animal in a given population, which is then termed wildlife species weight factor. It further states in this procedure, that one cow is equal to 725 pounds and one cow AUM is equal to a single cow grazing for a one month period. Both of these statements are totally incorrect. First, one AUM is not the weight of a

12-U. The correct year of publication for Anderson and Denton is 1978.

12-V. Appendix C-12, page C-26 has been revised and is included in the section of this FEIS following Chapter 4. The revisions make clear that the weight of a cow itself is 1,000 pounds, while the average monthly forage consumption of that cow is 720 pounds.

12-V Cont'd cow but the forage intake of that cow for one month. Secondly, if the weight of the cow were to be used, the glossary of the same draft should have been consulted. It defines an AUM to be the forage consumed by one mature cow of 1,000 pounds or its equivalent for one month based upon average daily consumption of 25 pounds of dry matter per day. The 720 pounds found in the appendix appears to be the same 720 pounds used throughout the ES as the amount of forage consumed per cow per month and not the weight of the cow. What the author of the appendix seems to have done is mixed apples and oranges. He has tried to compute wildlife unit months based on the weight of the cow opposed to the forage intake. Even then, he used 720 pounds opposed to the 1,000 pounds stated in the glossary.

As I stated earlier, the conversion factors of five deer, two elk, 10 antelope, and three barbery sheep per animal unit month appear to be accurate conversion factors. It is just the methods used to derive these conversion factors that need to be corrected in the draft.

12-W The technical note entitled Determining Forage Consumption Rates for Big Game by Anderson and Denton dated November 22, 1978, would be a good starting place for re-computing animal unit month conversion factors. The technical note, however, over estimates the amount of forage consumed by cattle during the winter. It states that one animal unit month equals one 800 pound unit of forage for a particular species. Current research shows that cattle do not consume that much forage per month on a maintenance diet during the winter. An intake of approximately 540 pounds per month would be much more resonable during the winter months. When this figure is used instead of the 800 pounds, the resulting conversion rates closely approach those listed in the appendix.

12-X How can the Proposed Action _and_ some of the Alternative Actions result in identical numbers of big game species by the year 2000? These are not truly alternatives if they do not have varying impacts upon the resource.

12-W. The Proposed Action and the alternatives do not result in identical numbers of big game species by the year 2000. Table 1-4 (page 1-24) shows the different number of big game species that are expected under the PA and all the alternatives. The numbers of wildlife AUMs were derived through the BLM's planning system using estimates of optimum wildlife populations (developed by the BLM and NMDG&F), habitat availability, and forage response to livestock stocking rates. (Refer to the response to comment 10-A.)

12-X. Anderson and Denton (1978) have been deleted from the Reference list, because their procedures and area of study were different from those of this DEIS. Instead, Stoddart, Smith, and Box (1975) have been referenced.

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Why is it assumed that a short-term reduction in stocking rates will result in a long-term increase in AUMs after which this increase can be sustained? There is no evidence in the ES or recent literature from New Mexico to support this projection. Fort Stanton had no livestock for eleven years and increased stocking rates severely depleted forage during the early 1970's when rainfall was either below average or came at a time when the plants could not respond.

Specific Comments - Wildlife

12-Y
pg 1-7 The Wildlife AUMs are constant throughout all alternatives -- how can this occur?
pg 1-8 Same comment as previous page.

12-Z
pg 1-24 Wildlife numbers projected in Table 1-4 vary widely between the various alternatives listed therein. How do these always total to 16,630 AUMs for wildlife as given on pages 1-7 and 1-8? How can the "existing environment" be "stable" for upland game bird habitat and the "no action alternative" produce a "stable-declining" habitat? Same comment for "non-game species birds habitat".
pg 1-25 Same comment for aquatic habitat.

12-AA
pg 1-26 Fire potential — "Increase" under existing environment and "no impact" under no action alternative?

12-BB
pg 2-16 Map 2-3 — Is entire planning unit elk winter range as depicted?

12-CC
pg 2-17 Paragraphs on barbary sheep, non-game species, and riparian and wetland habitats are very poorly written. these are in great need of editorial review for grammatical errors.
What is an "aquatic medium" other than water?
Are there "wet" terrestrial upland sites? I think the definition of an "upland site" makes it terrestrial and certainly less "wet" than

12-Y. Refer to the response to comment 12-Z.

12-Z. Wildlife numbers in Table 1-4 vary widely between the alternatives because these populations reflect the different habitat conditions likely to exist under the PA and alternatives. The numbers were derived by the New Mexico Department of Game and Fish and the BLM.

The 16,630 wildlife AUMs projected for the long term represent the optimum number of AUMs that were allocated by the BLM planning system for the year 2000. Availability of these AUMs will not guarantee a correspondingly large population of any wildlife species, because other habitat factors may limit population size.

Entries for upland game-bird, non-game species bird, and aquatic habitats, in Table 1-4 have been revised, as noted in the Errata section of this FEIS.

12-AA. Table 1-4 has been corrected (refer to Errata section).

12-BB. Map 2-3 has been reprinted correctly to show the elk winter range as identified in the legend.

12-CC. Page 2-17 has been rewritten; refer to the section of this FEIS following Chapter 4 for revisions.

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cont'd

12-CC Cont'd

riparian sites.

12-DD

pg 2-18 Aquatic Habitat — First sentence is an overstatement.

What is a "bluegill carp"?

Threatened or Endangered Species — Did Grubb observe 688 different (individuals) bald eagles or record 688 sightings of bald eagles?

12-EE

pg 2-19 Wild Horses — Was the decline of horses in the winter of 1978-79 due to only severe weather (not climatic) conditions and poor animal condition? Did not forage condition/availability play a role in this decline?

12-DD. Page 2-18 has been revised (refer to Errata section).

12-EE. The decline in wild horse numbers during the winter of 1978-79 was due to the unavailability of forage (heavy snow cover) and poor animal condition.

LIST OF PREPARERS

Report Writers

Name	Assignment	Education	Experience
John C. Arwood	Livestock and Wild Horses	BS Range Management Animal Husbandry Agricultural Economics	BLM - 11 yrs. Range Conservationist
Tom Bargsten	Soils	BS Soil Science	BLM - 4 yrs. SCS - 11 yrs. Soil Scientist
John E. Bristol	Visual Resource Recreation Wilderness Graphics Coordinator	BS Landscape Architecture	BLM - 3 yrs. USFS - 6 yrs. Landscape Architect
Richard A. Diener	Wildlife Biologist	Ph.D. Zoology	BLM - 3 yrs. Wildlife Biologist NMFS/NOAA - 14 yrs. Fisheries Biologist
Richard Fagan	Chief, Planning and Environmental Coordination Staff	MS Range Science BS Forest Range Management	BLM - 9 mos. Chief, Planning and Environmental Coordination Staff, 5 yrs. Area Manager
Donald R. Floding	Socioeconomic Conditions and Land Use	BS Urban Planning MS Town and Regional Planning	BLM - 1 yr. Community Planner Local Government - 9 yrs. Planning Director
Jim Fogg	Hydrology	BS Environmental Biology MS Watershed	BLM - 2 yrs. USFS - 1 yr. Hydrologist
Malcolm Huckleberry	Forester	BS Forestry MS Natural Resource Adm.	BLM - $3^{1}/_{2}$ yrs. BIA - $1^{1}/_{2}$ yrs. Forester
Samuel A. Lowance	Climate, Air Quality, Vegetation	Ph.D. Agronomy (Weed Science)	BLM - 3 yrs. Conservation Agronomist USDA-ARS - 10 yrs. Agronomist (Research Assistant)
Steven R. Marcus	Geologist	MS Geology	BLM - 6 yrs. Geologist
Coleman R. Robison	Paleontology	Ph.D. Paleobotany	BLM - 1 yr. Paleobotanist
Ralph Sena	Team Leader	BUS	BLM - 3 yrs. Environmental Coordinator
Sarah W. Spurrier	Writer/Editor	BA Psychology	BLM - $2^{1}/_{2}$ yrs. Writer/Editor
Carol Thompson	Archaeologist	BA Anthropology	BLM - 9 mos. Archaeologist BIA - 11 yrs. Teacher, Anthropology

TABLE 4-2 (Cont'd)

Background Preparers

The individuals listed here helped in compiling the basic data used in preparing the EIS. They had input into consultation, coordination, and public involvement efforts for inventorying and planning in the San Juan Planning Unit prior to the writing of the EIS.

Name	Experience (BLM)	Name	Experience (BLM)
Fred Anderson	6 yrs. Geologist	Timothy Kreager	1 yr. Range Conservationist
Virgil Anderson	2 yrs. Range Conservationist	J. Roderick Lister	2 yrs. Natural Resource Specialist
Tom Bargsten	4 yrs. Soil Scientist	Monte McClendon	1 yr. Range Conservationist
Bruce Bash	7 yrs. Realty Specialist	Angela Markovich	6 yrs. Realty Specialist
Willis Bird	9 yrs. Wildlife Biologist	Robert Moore	4 yrs. Natural Resource Specialist
Charles Boyer	7 yrs. Lands, Range, Comm. Plan.	Randy Morrison	$3^{1}/_{2}$ yrs. District Archeologist
Douglas Burger	$2^{1}/_{2}$ yrs. Realty Specialist	Clem Parkin	2 yrs. Range Conservationist
Bob Calkins	11 yrs. Area Manager	Ralph Pericoli	1 yr. Range Conservationist
Carl Dallas	4 yrs. Engineering Technician	Ben Phillips	2 yrs. Archeologist
Brantley Dickey	1 yr. Range Conservationist	Keith Rigby	3 yrs. District Paleontologist
Ilyse Ferraiuolo	2 yrs. Range Conservationist	Dick Speegle	4 yrs. Recreation Planner
Steven Friedman	1 yr. Range Conservationist	Edward Spence	1 yr. Range Conservationist
Ray Graham	19 yrs. Civil Engineering Technician	Jack Spears	$2^{1}/_{2}$ yrs. Range Conservationist
Victor Grizzle	1 yr. Range Conservationist	Dwain Vincent	12 yrs. Range Conservationist
Kent Hamilton	3 yrs. Economist	Bob Vlahos	6 yrs. Range Conservationist
Barry Hunt	1 yr. Range Conservationist	Jon Weddle	9 yrs. Range Conservationist
Robert Jones	1 yr. Range Conservationist	Craig Wilcox	1 yr. Range Technician
Phillip Kirk	8 yrs. Area Manager		

TABLE 4-2 (Concluded)

Support Personnel			
Name	Experience (BLM)	Name	Experience (BLM)
Harry DeLong	1 yr. Cartographic Aid	Jean Noling	6 mos. Clerk Typist
Myrna Finke	9 mos. Cartographic Aid	Eleanor Pfeifer	$2^{1}/_{2}$ yrs. Office Manager
Amy Lehner	8 mos. Clerk Typist	Marilyn Umbarger	10 mos. Clerk Typist
Jeffery S. Nighbert	1 yr. District Cartographer		

ADDITIONS
AND
CORRECTIONS
TO THE
DEIS

ERRATA

Title page, top of page: "Preliminary Draft" should read "Draft."

Page vi (Table of Contents), Illustrations: Map 2-7 should be titled, "Tentative Visual Resource Management (VRM) Classes."

Page 1-6 (Table 1-1): Under the AUMs Allocated subheading, the second subheading from the left should read, "Livestock Active Licensed Use [c]."

Page 1-7 (Table 1-2): Reference to footnote "b" should appear in both "Other" subheadings at the top of the table. Also, this footnote should read, "This vegetation is reserved for consumptive or non-consumptive uses, including watershed, wildlife habitat and cover, and aesthetics."

Page 1-13 (Standard Operating Procedures), Item Number 18, lines 6 and 7:"... the Advisory Council on Historic Places... "should read "...the Advisory Council on Historic Preservation..."

Page 1-18 (Interrelationships): Line 6 should read, "...Officer, Cooperative Extension Service of New Mexico State University, the New Mexico Department of Agriculture, and private landowners." (Refers to comment 12-J).

Page 1-19 (U.S. Fish and Wildlife Service): Paragraph 3, sentence 3 should read, "A final biological opinion dated May 10, 1980 has been received from the FWS." This information is added to Appendix G-3 as pages G-18 through G-27 (printed at the end of this section).

Page 1-23 (Table 1-4): Change "Grassland Aspect" subheading to read, "Grassland or Grassland-Shrub Aspect."

Page 1-24 (Table 1-4), Existing Environment Column: For both Upland game bird habitat and Non-game species habitat, entry should read, "Stable-declining." (Refers to comment 12-BB.) Also, "None-game" should read "Non-game."

Page 1-25 (Table 1-4), Existing Environment column: For Aquatic habitat, entry should read, "Stable-declining." (Refers to comment 12-BB.)

Page 1-26 (Table 1-4), No Action Alternative and Enhancement of Other Resource Values Alternative columns: For Forestry, the Fire Potential should read "Increase" instead of "No impact." (Refers to comment 12-CC).

Page 1-29	(Table 1-4): Change Unit of Measure entry for Herd Size, Sheep and Goats to read: "Average herd size in AUs; 5 sheep = 1 AU."
Page 2-16	Map 2-3 (Elk, Barbary Sheep, and Prairie Dog Habitat) has been reprinted correctly at the end of this section. It now shows the elk (winter range) as identified in the legend.
Page 2-17	The page has been revised and is reprinted at the end of this section. (Refers to comment 12-EE.)
Page 2-18	Delete the first sentence on the page ("Fish ... areas.") Also, add a comma between "bluegill" and "carp" in the last sentence of the second paragraph. Paragraph 6, Sentence 3 should read, "Grubb (1979) recorded a total of 668 sightings and 24 potential roost sites..." (All changes refer to comment 12-FF.)
Page 2-20	Map 2-4 (Wild Horse Areas) has been reprinted correctly at the end of this section. It now shows watering areas as identified in the legend.
Page 2-25	Map 2-7 (Tentative Visual Resource Management Classes) has been reprinted correctly at the end of this section. It now shows all VRM Class III lands as identified in the legend.
Page 2-26	(Wilderness), Paragraph 4, last sentence: change "September 30, 1980" to read, "November 15, 1980." The comment period and final decision date on wilderness areas have been extended.
Page 2-29	(Cultural Resources): Sentence 3 should read, "of these, only 746 site records, or 65 percent, contain data usable for management purposes."
Page 2-44	(Table 2-13): The first entry under the Economic Sector column should read, "Ranching."
Page 2-46	(Table 2-14): The first entry under the Economic Sector column should read, "Ranching."
Page 3-13	(Impacts on Vegetation, Maximization of Livestock Forage Production Alternative), table following Paragraph 5: The first entry on the second line ("ELG") should read, "MLFP."
Page 3-18	(Table 3-5): Title should read, "Summary of Sediment Yield by Alternative [a/] (acre-feet per year)."
Page C-25	(Appendix C-12): Last line should read, "personnel reviewed specifications of these three alternatives."

Page C-26 (Appendix C-12): Has been revised and appears at the end of this section. (Refers to comments 12-V and 12-W.)

Page H-1 (Appendix H-1), Allotment No. 5118, Crow Mesa: In the Average Licensed Use (6-yr. avg.) column, add the entry of "18H" below the present entry, "1,452C."

Page H-4 (Appendix H-1), Allotment No. 5042, Scattered Tracts: The footnote reference (now reading "g/") should read, "h/"."

Page H-5 (Appendix H-1), Allotment No. 5066, La Jara Canyon: Insert footnote reference "i" after the allotment name.

Page H-10 (Appendix H-1): The entry for Subtotal-Non AMPs in the Average Licensed Use (6-yr. avg.) a/ column should read, "48,624k/." Also delete footnotes "j/" and "m/", and all references to these in the table itself.

Page L-6 (Appendix L-6): Add footnote reference "h/" to the sheep entry in the Ranch Type column. Also, add footnote h/ at the bottom of the table, to read, "h/ Sheep shown in AUs; 5 sheep to 1 AU."

Page R-1 (References): Delete the following:

Anderson, L. D. and Denton, J. W. 1979. Base data analysis... Technical Note, 11-22-1979. (Refers to comment 12-W.)

Page R-2 (References): Add the following after "Fleigel, F. 1976..."

Gifford, Gerald F. 1972. Infiltration and sediment production trends on a plowed big sagebrush site. Journal of Range Management 25:53-55.

Gifford, Gerald F. 1975. Impacts of pinyon-juniper manipulation on watershed values. In: The pinyon-juniper ecosystem: a symposium. Utah State University, Logan.

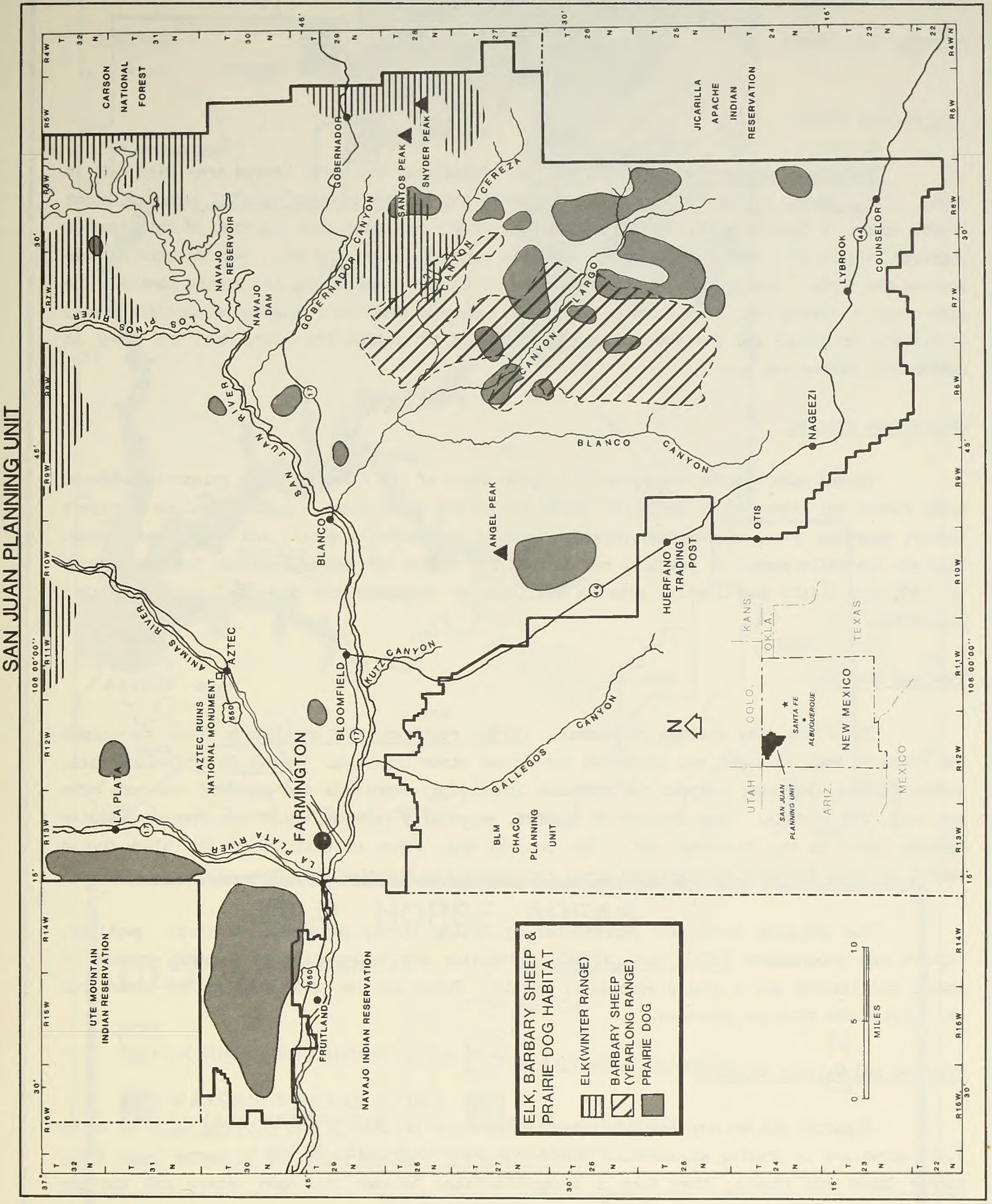
(Refer to Comment 12-H.)

Page R-5 (References): Add the following after "Steel, R. G. D. and Torrie, J. H. 1960...":

Stoddart, L. S., Smith, A. D., and Box, T. W. 1975. Range Management. 3rd ed. New York: McGraw-Hill Book Co., Inc.

DEIS PAGES REPRINTED
WITH CORRECTIONS

SAN JUAN PLANNING UNIT



MAP 2-3

Barbary sheep

Twenty-one Barbary sheep were first introduced into the Largo Canyon area (Map 2-3) in 1956. Since then, estimated population has increased to 204 head on habitat covering about 82,950 acres. A fecal analysis by BLM (USDI, BLM, 1979f) indicates that the diet of this species consists largely of browse (serviceberry, mountain mahogany, sage, and oak), supplemented by some grasses and forbs. The percentage of grasses and forbs increases during the spring months. The wide range of forage plants included in their diet, coupled with the frequency of multiple births (twins and triplets) and the sheep's ability to breed throughout the year, make the sheep an aggressive, pioneering species.

Upland Game Species

Upland game species occupy about 510,000 acres of the Planning Unit, primarily centered along rivers and lakes and in scattered upland wooded and shrub areas. Species include Merriam's turkey, mourning dove, ring-necked pheasant, scaled and Gambel's quail, and bandtailed pigeon. They are typically summer or yearlong residents. The chukar was introduced into San Juan County in 1957, but little quantitative data is available to determine the degree of success of this population.

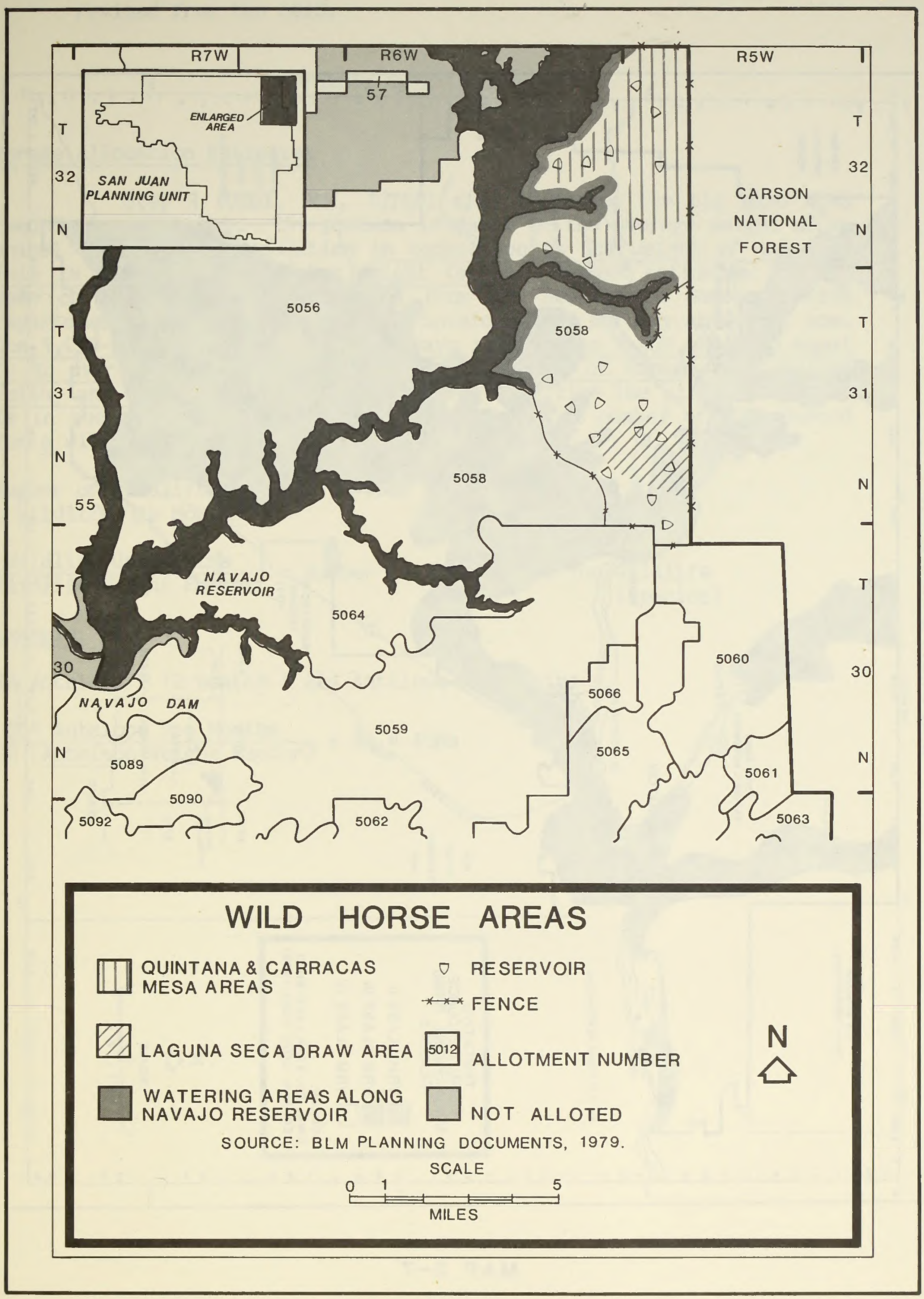
Non-Game Species

There are many species of mammals, birds, reptiles, and amphibians found throughout the Planning Unit that are not discussed here under other headings. Mammal forms include bats, shrews, skunks, coyotes, bobcats and mountain lions, fox, squirrels and gophers, numerous mice and rats, and rabbits. Many species of mammals, especially rodents, enter the diet of predator species found in the Planning Unit. The prairie dog, which is utilized by the black-footed ferret as food, is found in scattered areas throughout the Planning Unit (Map 2-3).

The non-game birds are represented by wading birds, passerine songbirds, swallows, raptors and woodpeckers (USDI, BLM, 1979f). Reptiles are represented by several species of snakes and lizards and a single species of turtle. Seven species of amphibians are known from the aquatic and riparian habitats.

Riparian and Wetland Habitats

Riparian and wetland habitats cover 4,893 acres of land in the Planning Unit, of which 1,979 acres are in grazing allotments. These areas are composed primarily of narrow bands which border lakes and rivers; they form a transition zone between the open waters and the dry terrestrial upland habitats. In undisturbed conditions, the vegetation is represented by a large amount of foliage, and it shelters numerous wildlife species. The composition of the wildlife is the most diverse in the Planning Unit, (USDI, BLM, 1979f).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ENLARGED AREA
SAN JUAN PLANNING UNIT
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NAVAJO RESERVOIR
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NAVAJO DAM
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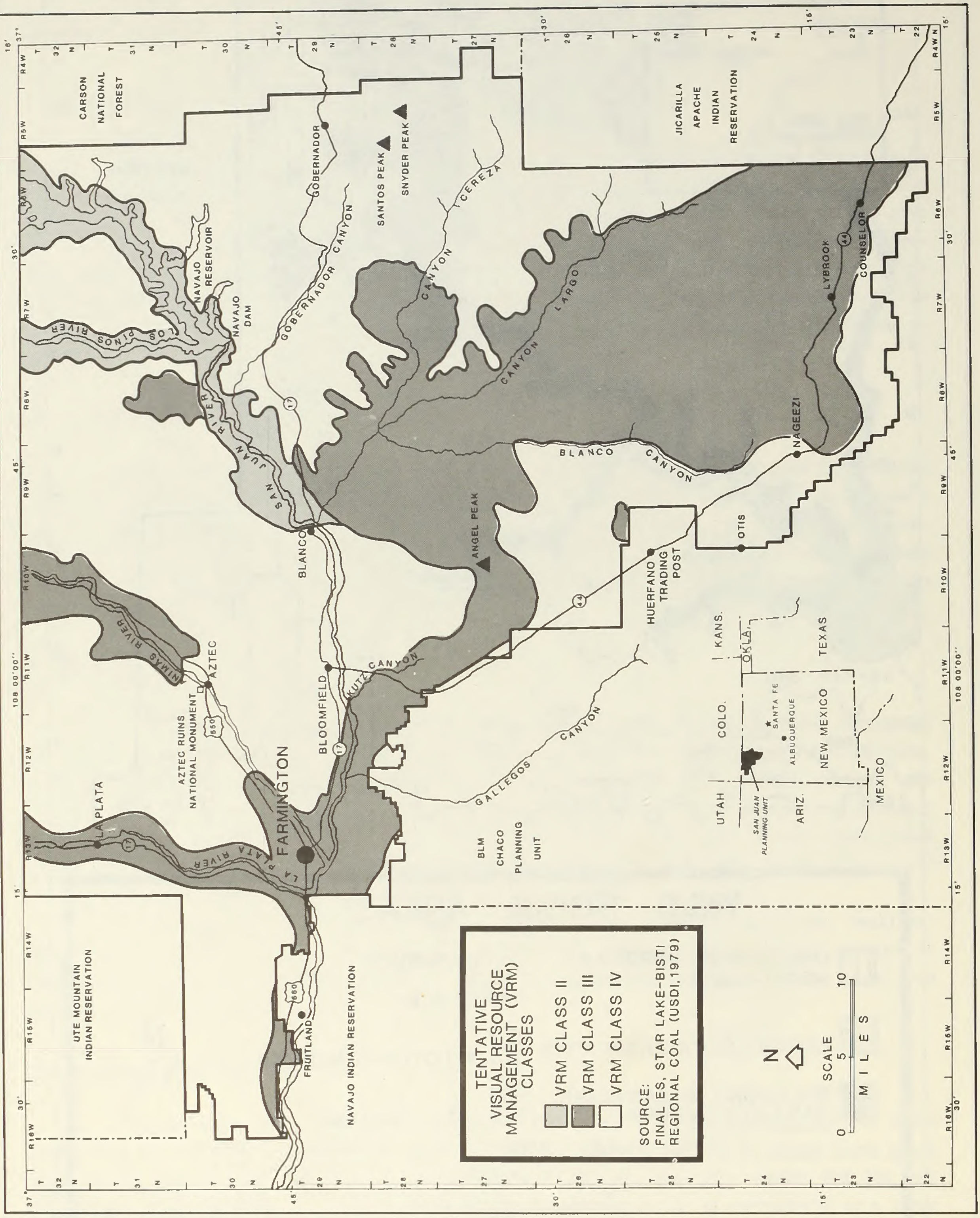
5092
5062
5063
WILD HORSE AREAS
QUINTANA & CARRACAS MESA AREAS
RESERVOIR
FENCE
LAGUNA SECA DRAW AREA
5012
ALLOTMENT NUMBER
WATERING AREAS ALONG NAVAJO RESERVOIR
NOT ALLOTED
N
SOURCE: BLM PLANNING DOCUMENTS, 1979.
SCALE
0
1
5
MILES

MAP 2-4

SAN JUAN PLANNING UNIT



MAP 2-7

Note: Underlined portions are those that have been substantially revised from the DEIS.

APPENDIX C-12 (Concluded)

Forage Allocation Estimates

Step 3 (USDI, BLM, 1979f) also indicates the big game AUMs needed per allotment. The process is based on the average weight of an animal from a given population in comparison to the weight of one cow. This is the wildlife species weight factor. Weight estimates for big game on this basis were obtained from the New Mexico Game and Fish Department: 5 deer or 2 elk or 10 antelope or 3 Barbary sheep = 1 cow. One 1,000-pound cow grazing for 30 days is equal to 1 AUM which is equal to an average monthly consumption of 720 pounds of forage-- (Stoddart, Smith, and Box, 1975). Based on the length of time the wildlife species is in the allotment, the formula for arriving at number of AUMs needed for a wildlife species is:

Number of Wildlife X Amount of Time in Allotment =
Wildlife Use Months

$$\frac{\text{Wildlife Use Months}}{\text{Wildlife Weight Factor}} = \text{Number of AUMs needed for wildlife (species)}$$

Example:

22 Antelope X 12 months = 264 Antelope Use Months

$$\frac{\text{264 Antelope Use Months}}{\text{10 (Antelope Weight Factor)}} = \text{26.4 AUMs}$$

PAGES ADDED TO THE DEIS

MARCH 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

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ALBUQUERQUE, NEW MEXICO 87103

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1. RESOURCE:
Rgt act.

2. C.7

May 1, 1980

MEMORANDUM

TO: State Director, Bureau of Land Management, Santa Fe, New Mexico

FROM: **Acting** Regional Director, FWS, Region 2

SUBJECT: Formal Consultation on the San Juan Grazing Management Plans

This responds to your memorandum of February 7, 1980, requesting formal Section 7 consultation on the San Juan Grazing Management Plan. On November 14, 1979, the Bureau of Land Management requested from the Fish and Wildlife Service a list of proposed and listed threatened and endangered species known or suspected to occur in or near the project area. The list was provided to the Bureau of Land Management by the Fish and Wildlife Service on December 12, 1979, and contained the black-footed ferret (Mustela nigripes), bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus), Colorado River squawfish (Ptychocheilus lucius), Knowlton's cactus (Pediocactus knowltonii), and Mesa Verde cactus (Sclerocactus mesae-verdae). The Bureau of Land Management conducted a biological assessment and determined the Knowlton's cactus would not be affected by either the proposed or four alternative grazing management plans.

Information used to assist in this consultation consisted of in-house documentation and literature, the draft "Biological Assessment" and "Proposed Action and Alternatives" sections of the "PD EIS San Juan Grazing Statement" provided by the Bureau of Land Management with their letter of February 7, 1980, project location maps A through E and I through IV provided by Bureau of Land Management with their memorandum of November 14, 1979, and conversations with Bureau of Land Management personnel.

The San Juan Planning Unit contains about 1,429,951 acres in portions of San Juan, Rio Arriba, and Sandoval Counties, New Mexico. The Federal government administers 981,772 acres, the State of New Mexico 122,284 acres, and the remaining area by Indian and private interests. The planning unit is bounded by Colorado on the north, the Jicarilla Apache Indian Reservation and the Carson National Forest on the east, the

Navajo and Ute Mountain Indian Reservations on the west, and the Bureau of Land Management Chaco Planning Unit on the south, the north boundary of which generally follows New Mexico State Highway 44. The Farmington Resource Area Office, Albuquerque District, Bureau of Land Management administers 946,844 acres of the public land for various uses in this planning unit. The 138 grazing allotments in the planning unit contain 926,909 acres, of which 27 percent is managed under 15 Allotment Management Plans (AMPs) that were implemented prior to December 30, 1974. The remaining 34,928 acres of public land in the planning unit comprise various public purpose withdrawals and public water reserves. Any livestock grazing on these lands is administered by the Bureau of Land Management.

The five grazing management plans addressed are described as follows:

1. Proposed Action

   The objectives of the proposed action are to, by the year 2,000: 1) Increase livestock forage production to 90,311 Animal Unit Months (AUMs); 2) increase wildlife forage production to 16,630 AUMs; 3) protect critical deer habitat in the La Plata, Largo Canyon School, Rosa, Timbered Cove, and Gobernador Snyder Peak areas and along the San Juan River to provide forage for present and future deer populations; 4) protect critical elk habitat in the Rosa area to provide forage for present and future elk populations; 5) protect coldwater fish habitat and riparian vegetation along the San Juan, Animas, and La Plata Rivers, and the Navajo Reservoir to improve habitat for coldwater fish and increase their production; 6) improve forage condition on 773,480 acres of public land that is in less than good condition, and maintain good condition on 153,429 acres of public land; and 7) maintain the existing low-erosion condition classes on 169,354 acres of soils in the planning unit.

   Under the "Proposed Action" the livestock grazing level would be below the current authorized level of 108,001 AUMs, but above the average actual licensed use of 66,165 AUMs. The initial livestock stocking rate would be 69,335 AUMs which would be increased over the 20-year period to 90,311 AUMs. The initial wildlife stocking rate would be 5,799 AUMs which would be increased to 16,630 AUMs over the 20 years. The stocking rate for wild horses would be held at the current level of 276 AUMs. Increased stocking rates would result from vegetation treatments and improved grazing management.

The existing 15 AMPs are currently managed by deferred rotation grazing systems which would remain unchanged; however, AUM allocations would be reduced to surveyed grazing capacity on all but two AMPs. AMP allocation would remain the same under these two AMPs. All non-AUM allotments would receive a more intensive grazing management program that would incorporate spring and summer rest periods as employed on existing AMPs. The proposed action would also allow 54 allotments that are being grazed above surveyed capacity to recover once reduced to proper grazing capacity. Management on 68 allotments that are being grazed at or below capacity would be enhanced. Appropriate monitoring, accomplished under BLM Manual 4413 guidelines, would be used to insure that capacity changes are identified and quantified. Significant modifications indicated, as a result of the monitoring, would require preparation of an environmental assessment or a supplement to the EIS. Livestock numbers will be adjusted during periods of drought and when forage production increases.

Implementation of the Proposed Action would require vegetation treatments and development of support facilities. Vegetation treatment would be limited to seeding only, chaining only, chaining and seeding, and plowing and seeding. Livestock grazing would be deferred a minimum of two grazing seasons. Specific locations for vegetation treatments will be determined when specific management plans are developed for each allotment. Support facilities required by the action, include 9 earthen reservoirs, 18 miles of pipeline, 33 drinking troughs, 15 wells and well facilities, 7 storage tanks, 7 springs, 2 slickrock catchments, 7 cattleguards, 9 miles of fence and 1 sump. Of the 18 "committed" procedures that the EIS states will be used in constructing support facilities and applying vegetation treatments, the following 9 procedures address endangered species concern:

"1. This EIS analyzes cumulative impacts of proposed range developments. However, before construction, the BLM will prepare site-specific environmental assessments (EAs) to analyze environmental impacts from projects required for AMP implementation.

* * *

2. Permanent roads or trails will not be constructed to project sites. Existing access roads and trails and off-road vehicles will be used where needed.

* * *

3. After construction, disturbed areas will be revegetated.

* * *

4. A qualified botanist will intensively survey all potentially disturbed areas for Federally proposed and listed threatened and endangered plant species and for State listed species. Those areas in which no disturbance is permitted because of threats to listed species will be designated.

* * *

5. Areas to be cleared for construction of range projects will be restricted to the minimum.

6. Sagebrush control will be done in irregular patterns to maximize edge effect.

* * *

7. A threatened and endangered animal clearance will be required before construction of developments is started. After formal consultation with the Fish and Wildlife Service under Section 7 of the Endangered Species Act has been initiated, it is determined that if the developments would lessen the value of the habitat for a threatened or endangered species, the project will be modified, relocated, or abandoned.

* * *

8. Islands and drainages will be left in native vegetation on all sagebrush control treatment areas. No vegetation treatments

will be implemented after AMP completion."

2. No-Action Alternative

Under the No-Action Alternative, current management practices would continue. Livestock forage allocation would remain at 66,146 AUMs while that for wildlife would remain at 5,799 AUMs. No forage would be allocated for wild horses. No new AMPs would be developed and allotments without AMPs would be managed as they are at present. The 15 allotments presently under AMPs would be intensively managed. Existing range developments would be maintained but no new developments would be constructed.

3. Elimination-of-Livestock-Grazing Alternative

Implementation of this alternative would eliminate livestock grazing on 926,909 acres of public land and 108,371 AUMs of livestock preference would be cancelled. Existing AMPs would be cancelled and no new AMPs would be developed. Wildlife would be allocated 74,990 AUMs of forage while the forage allocation for wild horses would be 420 AUMs. Range developments would be maintained or constructed only if needed for other Bureau of Land Management programs such as wildlife or watershed. Range developments serving no useful purpose would be removed. Livestock trespass would be controlled by herding or fencing private and State land intermingled with public land. Trailing permits would be issued for crossing Bureau of Land Management administered land to reach National Forest, State, or private lands.

4. Maximization-of-Livestock-Forage Alternative

The Maximization-of-Livestock-Forage Alternative would apply an intensive range management program to achieve optimum forage production for livestock. It would involve the conversion of 184,477 acres of existing sagebrush and pinon-juniper vegetation to grassland. In 3 to 5 years, vegetation treatments would provide 16,584 AUMs in addition to the 69,335 AUMs available to livestock under the Proposed Action Management Plan. By the year 2,000 the livestock forage allocation would be increased to 106,895 AUMs. Forage allocation for wildlife and wild horses would be the same as under the Proposed Action.

Range developments and intensive management as described for the Proposed Action would be implemented. Intensive management would be implemented on 138 allotments and present management would continue on 15 allotments with AMPs as in the Proposed Action. Of the 184,477 acres to be converted to grassland, 25,705 acres of sagebrush would be treated with herbicidal spray, and 106,889 acres of pinon-juniper and 51,883 acres of sagebrush would receive mechanical treatment. The type of mechanical treatment to be used will be determined when specific plans are developed for each allotment; however, design features for mechanical treatments will be the same as, or similar to, those for the Proposed Action.

Standards for spraying will be based on standard BLM designs. Methods used for chemical control of sagebrush will generally follow recommendations of the Inter-Agency Range Committee. Restriction on herbicidal spraying procedures, as stated in the "Proposed Action and Alternatives" Section of the "PD EIS San Juan Grazing statement," are as follows:

1. Sprays will not be applied to water areas or areas where they could reasonably be expected to get into water.
2. Spraying of conventional emulsions would be prohibited when wind speeds exceeded 7 miles per hour, and spraying of invert emulsions would be prohibited when wind speeds exceeded 15 miles per hour.
3. Spraying would not take place when upward air currents are present;
4. contract aircraft with drift reduction nozzles would be used for spraying;
5. only Federally registered herbicides will be used;
6. herbicides will be used only as specified on their currently effective labels;
7. an Environmental Assessment (EA) would be prepared prior to each spray project to identify impacts and measures to be taken to mitigate adverse environmental impacts;
8. projects which include use of herbicides would be reviewed for approval in advance by the Bureau of Land Management, Washington, D.C. Office;
9. Federal and State agencies with responsibilities for environment, public health, and fish and wildlife would be informed of programs and cooperative measures developed when necessary;
10. personnel handling or applying herbicides will be holders of, or will be under direct supervision of holders of, a commercial applicators license; and
11. each person involved with the handling and application of the herbicide shall be instructed on safety procedures to be used, and shall be required to use any personal protective clothing and/or equipment specified on the label;

12. sufficient flagging would be used to keep application aircraft in straight-line flight patterns;
13. areas which contain populations of proposed threatened, endangered, rare, or unique plant species will not be sprayed;
14. mixing, loading, and cleanup operations will take place in areas where accidental spill can be contained and would not flow into a stream or body of water;
15. empty containers would be rinsed, perforated, and buried in an approved landfill;
16. application contracts will require an air gap or reservoir between the live water intake and the mixing tank to prevent any backflow of chemicals into water source;
17. spraying will not be conducted when the air temperature is above 85 degrees F., when precipitation is occurring, or when precipitation occurrence is imminent;
18. weather conditions will be continually monitored during spray applications;
19. spray aircraft will normally be required to fly at an airspeed of less than 100 miles per hour and at a height less than 20 feet above the vegetation unless obstructions are encountered, and
20. herbicides will not be applied within 1,000 feet of watering locations, houses, sensitive wildlife habitat locations, or populations of proposed threatened, endangered, rare, or unique plant species.

5. Enhancement-of-Other-Resource-Values Alternative

The Enhancement-of-Other-Resource-Values Alternative considers a lower level of livestock use than the proposed action in order to enhance other resource values. Livestock numbers under this alternative would be the same as under the proposed action on all good condition range, but grazing use of the forage produced on fair and poor condition ranges would be reduced by 50 percent to enhance wildlife habitat, visual resources, and watershed protection. Improvement in range condition would be more rapid under this alternative than under other alternatives or the Proposed Action.

Initial livestock forage allocation under this alternative would be 42,041 AUMs as opposed to 69,335 AUMs under the Proposed Action. The reduction would be borne by the 773,480 acres of range identified as being in fair and poor condition. The short-term forage allocation for wildlife would be 32,949 AUMs while the short-term for wild horses would be 420 AUMs. By the year 2,000, the wildlife allocation would increase to 64,756 AUMs while the wild horse allocation would remain at 420 AUMs. As under the Proposed Action, this alternative would include a monitoring program to measure the effects of the livestock reduction and would provide for modification of the alternative if warranted.

Knowlton's cactus (Pediocactus knowltonii) was listed as endangered on November 28, 1979. This small rounded cactus barely protrudes above ground level and retracts underground during dry seasons. It is found in extreme northeast San Juan County at elevations of 6,000 - 6,500 ft. in pinon-juniper woodlands. The BLM Biological Assessment determined the species to be found on private land for which no land disturbing activities would be conducted under the Proposed Action or any of the Alternative Actions; however, it was concluded that the above actions might affect potential habitat for the species.

Mesa-verde cactus (Sclerocactus mesae-verdae) was listed as threatened on November 29, 1979. This small cactus is found in the Navajo Desert of southwest Colorado and western portions of San Juan County, New Mexico. It is primarily restricted to exposed seams of Mancos clay, the exceptions being recent collections on shales and fine sandstones of the Fruitland Picture Cliffs and Menefe Formations. The Bureau of Land Management Biological Assessment determined that the species sites would be subjected to vegetative treatments under the Proposed and Alternative Actions. The construction of dirt reservoirs, pipelines, wells and drinking tubs might result in the destruction of individual plants.

The black-footed ferret (Mustela nigripes) was listed as endangered on March 11, 1967. The historic range of this large, secretive, nocturnal weasel coincides with that of the prairie dog, the primary prey species. Black-footed ferrets are extremely rare; however, it is thought that it may still be found in some areas in association with large prairie dog towns. Although there are no specific records of black-footed ferrets in the project area, the presence of prairie dogs opens the possibility of the animal existing in the area. The BLM Biological Assessment determined that vegetative treatments under the Proposed and Alternative Actions would adversely affect prairie dog burrows and prairie dog food resources which may in turn have a temporary adverse affect on any black-footed ferrets residing in the area.

The peregrine falcon (Falco peregrinus), known from a single verified record and from unverified sightings in the project area, was listed as endangered on October 13, 1970. No eyries are known to exist in the area. The decline of the species has been attributed primarily to pesticides in its food supply causing eggshell thinning, non-viable eggs, and increased adult mortality. Peregrine falcons feed largely on migratory birds and typically hunt riparian areas. Eyries are usually associated with cliff environments and bluffs of gentle terrain. Although the long-term affect of the Proposed or the Alternative Actions should result in improved riparian habitat and an increased food supply for the peregrine falcon, the Biological Assessment determined that vegetative treatments under the Proposed Action and the Alternative Actions could have a short-term adverse affect on the species.

The bald eagle (Haliaeetus leucocephalus) was listed as endangered on March 11, 1967. The decline of the bald eagle has been attributed to the loss of breeding habitat, illegal shooting, and as with the peregrine falcon, the presence of pesticides in the food supply. In the project area, an eagle nest is known to be present near Navajo Reservoir; however, most eagles in the area are thought to be migrants or winter residents. Bald eagles are generally associated with and dependent upon water. Its food base may include fish, small mammals, waterfowl and carrion, although fish is usually the important food item. The Biological Assessment reported that recent studies determined that bald eagles in the project area were feeding primarily on deer and elk carcasses with a secondary dependence on small mammals and birds. Fish use by eagles was found to be slight. The Assessment further concluded that vegetative treatments in the project area could have a short-term adverse affect on the bald eagle; however, the long-term affect on the species should be of a positive nature.

The Colorado River squawfish (Ptychocheilus lucius), the United States largest minnow, was listed as endangered on March 11, 1967. This slender-bodied fish, which may reach a length of 6 feet, was at one time widespread and abundant throughout the mainstream Colorado River and its major tributaries, including the San Juan and Animas Rivers. Its range has been reduced by about 75 percent because of dams, diversion of water and reclamation of pre-impoundment rivers. Competition with exotic fish species and pollution have also contributed to the species decline. Prior to the construction of the Navajo Dam (1962), squawfish were regularly reported from the San Juan River in New Mexico. Reclamation and habitat changes associated with the dam apparently eliminated squawfish from the upper river; however, a juvenile specimen was located in the San Juan River at the mouth of McElmo Creek, near Aneth, Utah in April, 1978. It was determined that the specimen had been spawned in the river, probably in 1975 or 1976, making the San Juan River, one of only three known rivers where successful reproduction has recently occurred. The BLM Biological Assessment concluded that herbicides used in the "Maximization-of-Livestock-Forage-Production," alternative might adversely affect parts of the aquatic habitat vital to the maintenance of fish species if herbicides are allowed to enter some waterways. However, long-term affects of the Proposed Action and the Alternative Actions are expected to improve riparian habitats.

It is my biological opinion that if the policy safeguards for endangered and threatened species recorded in this memorandum and in the "PD EIS San Juan Grazing Statement" are employed, neither the Proposed Action nor any of the Alternative Actions are likely to jeopardize the continued existence of the listed species or adversely modify habitat essential to their survival. This opinion is being issued with the understanding that the BLM will survey site specific areas for listed species prior to construction of range developments or application of vegetative treatments and that appropriate steps will be taken to protect the welfare of any listed species encountered.

I appreciate the cooperation you have afforded us during this consultation. Further consultation is not required unless new information becomes available that addresses the welfare of the species discussed, new threatened or endangered species are listed that may be affected by your action or the action is significantly modified.

cc: FWS, Washington, D.C. (OES)
Phoenix Area Office (SE)
Field Supervisor, Phoenix, AZ (ES)
Director, Arizona Game & Fish Dept.
Att: Chief, Wildlife Mgmt. Div.,
Phoenix, AZ
New Mexico Dept. of Game & Fish

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